

EVALUATING NURSING SYLLABI FOR PROPENSITY TO EMPLOY
LEARNING ENVIRONMENT DESIGN PRINCIPLES

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ABSTRACT

Learning-centered (LC) teachers strive to engage all available resources when developing learning environments to support optimal student learning. By shifting focus away from mere factual knowledge building via memorization, LC teachers employ practices aimed towards students attaining a deeper and more thorough comprehension of issues. By focusing on developing understanding through engaging real-life problems and employing reasoning processes which experts frequently use, LC teachers position students in a more active role in the learning process. A review of literature from 2002 through 2013 reveals expansion of the theoretical understanding of learning-centeredness, as well as, exploration regarding how learning-centeredness articulates within current educational practices. What is not apparent from a review of nursing literature is consistent use of a framework guiding design practices for learning environments. This study conveys use of a framework of learning environment design (LED) in the form of a rubric to evaluate a readily available artifact of college learning environments, the course syllabus. The purpose of this dissertation is two-fold. First, this dissertation explores the development, including validity and reliability substantiation, of a rubric based on the learning design perspectives set forth in a framework for learning environment design (Bransford, Brown, & Cocking, 2000). Second, this dissertation identifies the extent learning design perspectives are employed in a selection of nursing syllabi. The development of an instrument that is valid and reliable should provide a helpful adjunct for faculty seeking to become more learning centered.

LIST OF ABBREVIATIONS AND SYMBOLS

AACN	American Association of Colleges of Nursing
ACE	Assessment-Centered Environments
ANA	American Nurses Association
ANOVA	Analysis of Variance
BON	Board of Nursing
BSN	Bachelor of Science in Nursing
CCE	Community-Centered Environments
CI	Content Item
CINAHL	Cumulative Index of Nursing and Allied Health Literature
<i>df</i>	Degrees of Freedom
DC	Design-Centered
ERIC	Education Resource Information Center
=	Equal to
<i>F</i>	F statistic
>	Greater than
IBM [®]	International Business Machines Corporation
IOM	Institute of Medicine
IRB	Institutional Review Board
KBD	Know-Be-Do
KCE	Knowledge-Centered Environment

LC	Learning-centered
LCE	Learner-Centered Environments
LCT	Learning-Centered Teaching
LED	Learning Environment Design
LED-RS	Learning Environment Design Rubric for Syllabi
<	Less than
<i>M</i>	Mean
MANOVA	Multivariate Analysis of Variance
<i>Md</i>	<i>Median</i>
<i>N</i>	Number
NLN	National League for Nursing
NRC	National Research Council
<i>p</i>	Probability associated with the occurrence under the null hypothesis of a value as extreme as or more extreme than the observed value
<i>r</i>	Pearson Correlation Coefficient
RQ	Research Question
SC	Student-centered
<i>Sig.</i>	Significance
SPSS [®]	Statistical Package for the Social Sciences
TC	Teacher-centered
US	United States

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CHAPTER I

INTRODUCTION

Many nursing faculty in the United States (US) are attempting to shift their approach in teaching away from teacher-centered (TC) methods of instruction towards using more learning-centered (LC) practices. These individuals consistently grapple with the realization that by merely focusing on factual knowledge building students are completing programs of study ill-prepared to function in evolving work and life settings. Use of LC educational approaches not only assists students with developing deeper understanding of many contemporary issues, they also provide them with the means to readily adjust to emerging ones as well. Review of literature over the past 10 years reveals an advancing understanding regarding the theoretical foundations of what LC means, as well as, exploration regarding how LC articulates within educational practices. What appears missing from the literature though is an examination of employment of learning environment design (LED) practices. The book, *How People Learn: Brain, Mind, Experience and School: Expanded Edition* (Bransford, Brown, & Cocking, 2000), conveys a framework which may be useful for examining the design practices of nursing faculty. Based on decades of literature from the learning sciences, courses that incorporate and align the design perspectives of learner-centeredness, knowledge-centeredness, assessment-centeredness, and community-centeredness best augment student learning (Bransford et al., 2000).

This dissertation begins by exploring the current condition of nursing in the United States in regards to contemporary nursing practice concerns and nursing education issues. A review of literature regarding LC practices and design in nursing education follows. Next, a relevant

framework to evaluate the design of the learning environment is introduced. In Chapter three of the dissertation, the methodology for the study conducted is put forth. The study conducted explores the development and evaluation of a rubric to assess for the National Research Council (NRC) learning design perspectives in an artifact of the learning environment, the course syllabus. The rubric was subsequently used with a selection of nursing course syllabi to identify the extent of use of the various learning design perspectives. The overarching goal of this dissertation was to develop and test an instrument to serve as a helpful adjunct for nursing faculty seeking to better design syllabi in a learning-centered format to support student learning.

Background

The US health care system has experienced dramatic changes during the last decade. Many of these transformations are due in response to an Institute of Medicine (IOM) report that was released approximately 15 years ago. In *To Err is Human: Building a Better Health Care System* (Kohn, Corrigan, & Donaldson, 1999), medical errors were identified as the cause of as many as 98,000 deaths per year. Governmental inquiry following the report led to mandates to study the origins of these medical errors and to ascertain and distribute approaches to remedy the causal factors (Kuzel & Engel, 2011). Investigators across all disciplines engaged the call. In the area of primary care medicine, investigators found breakdowns in access to care, communication with office staff, patient relationships with physicians, technical/procedural matters, and efficiency of care as contributing issues (Kuzel & Engel, 2011). Nurses from academic and health care sectors also began comprehensive analysis of the US health care industry attempting to identify the nursing connection to the IOM report (Leape & Berwick, 2005). Several major areas were identified including the presence of stressful work environments (Krichbaum et al., 2007, MacKusick & Minick, 2010; Sumner & Townsend-Rocchiccioli, 2003), an overall

shortage of nurses to care for hospitalized patients (American Association of Colleges of Nursing [AACN], 2011; American Nurses Association [ANA], 2012), and the shortage of nursing faculty (Benner, Sutphen, Leonard, & Day, 2010; Yordy, 2006).

As a result of stressful work environments, individuals are making choices regarding continuing in their careers. These choices include remaining in practice, leaving practice, or remaining in practice but, moving to a faculty position. Literature on individuals choosing to move into faculty work reveals use and a continued reliance on teacher-centered educational practices (Candela, Dalley, & Benzel-Lindley, 2006; Doyle, 2011; Stanley & Dougherty, 2010; Weimer, 2002). Additionally, these individuals lack basic knowledge in learning environment design (Fink, 2003). Together, these two issues continue to perpetuate an educational system where students develop knowledge bases replete with disconnected facts and lacking in deep understanding of content. The result is a continuance of underprepared nurses entering practice (Benner, Sutphen, Leonard, & Day, 2010; Stanley & Dougherty, 2010). The hemorrhaging of individuals from the nursing ranks has to be stopped and improvement in educational preparation of students must occur if broader problems involving medical errors are to be prevented. See Figure 1 for depiction of the current relationship of the professional practice and nursing education issues leading to US health care system problems.

An argument could be made that remedying any one of these nursing issues could benefit nursing as a whole, but it seems that a more directed effort might possibly offer more effective and longer-lasting effects. Based on a National League for Nursing [NLN] (2005) finding which relates that the root of the issue seems to be a nursing education system that is struggling to keep up with an increasingly complex healthcare system, it is this authors opinion that the emphasis

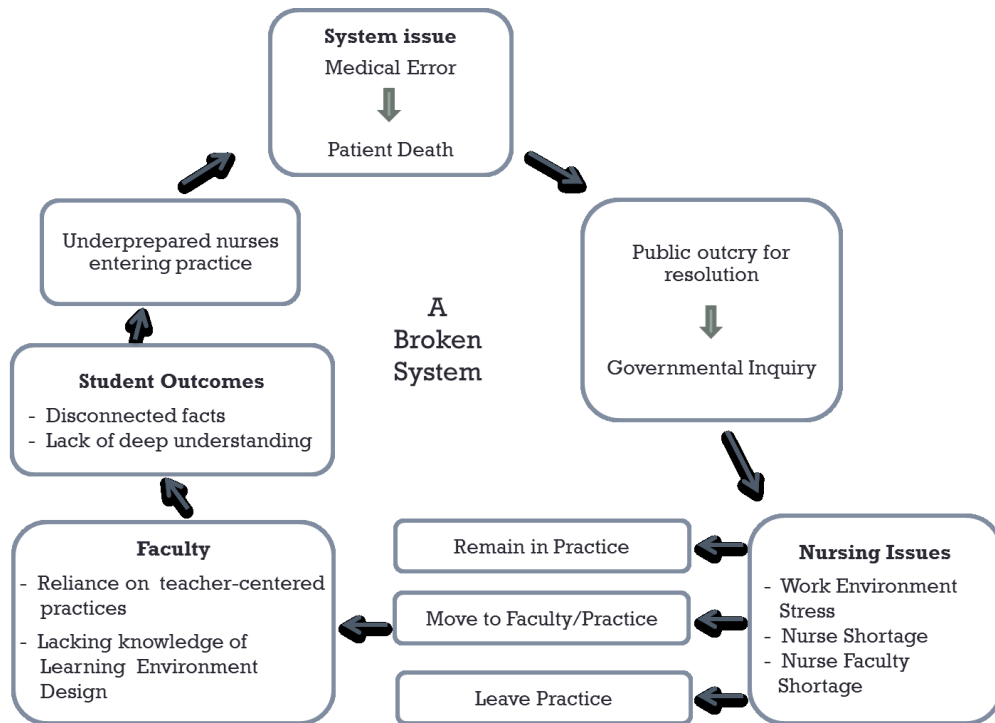


Figure 1. Depiction of the current relationship of the professional practice and nursing education issues leading to US health care system problems.

should be directed more-so at the nursing education system. The reason for this decision is that the education system appears to offer a unique space where significant and lasting change may be made towards addressing these problems concurrently. Furthermore, since schools of nursing are places where future nurses learn their craft of practice and develop the lifelong habits which guide their career decisions, this would be a logical choice where emphasis should reside.

From the beginning, nursing students could be actively engaged in navigating the complexities in the health care system. For example, including specific content in courses could help students explore and integrate ways of diminishing job stress in workplace environments. Further, addressing changes specifically at the level where new nurses are educated may help develop more competent nurses who are adept at managing their environments. If changes like these can be made, then it should be possible to retain experienced nurses on the job longer who

are better prepared at handling work environment issues. This becomes important because many nurses leave the profession before they can be recruited to consider teaching in nursing as a career endeavor.

A Locus for Change

According to the NLN (2005), nursing education has not kept up with an increasingly complex healthcare system due in part to the speed of scientific discovery and widespread demands for health care to maintain pace with new information. These issues continue to tax the limits of the current nursing education system (NLN, 2005). The IOM (2010) echoes this claim adding that current nurse education preparation is inadequate to deal with the changes in health care. The result is the need for change in the education process to better prepare nurses entering the workforce (NLN, 2005). In the National Nursing Education Study, *Educating Nurses: A Call for Radical Transformation* (2010), commissioned by the Carnegie Foundation for the Advancement of Teaching's Preparation for the Professions, study authors proclaim that "nursing in the United States is at a significant moment" (p. 1) and wholesale alterations are essential. Beginning nurses "must enter practice ready to continue learning, often through self-directed learning that can be adapted to any site of practice" (Benner et al., 2010, p.1). A recent shift in focus, on resolving system problems related to patient safety issues, has led to some degree of success in the overall reduction of errors (Leape & Berwick, 2005), but many educational processes in nursing continues to need reform. One locus for reform is the arena involving design within learning environments (Benner et al, 2010; Bransford et al., 2000; Candela, Dalley, & Benzel-Lindley, 2006; Colley, 2012; Doyle, 2011; Stanley & Dougherty, 2010; Weimer, 2002).

Learning Environment Design in Nursing

Establishing course goals, planning learning activities and assessing and evaluating student's progress towards program outcomes are just a few aspects of course design and comprise some of the integral functions in a nurse educator's role. Creating learning experiences is not a new topic in nursing education, but it is a topic receiving a substantial amount of attention. Although other responsibilities exist, being able to design a comprehensive learning environment is critical if an educational experience for students and faculty is to be meaningful and enriching. LED is a process of designing and aligning all aspects of a course including deciding purposes and aims, determining and organizing material, choosing instructional methods and learning activities, selecting references, and preparing an assessment and evaluation plans (Billings, 2012). A thorough understanding of LED causes nurse learning to be placed front and center, and requires that nurse educators consider the broader picture when developing instruction to effectively prepare nurses to meet learning goals and outcomes (Fink, 2003; Cahill, Turner, & Barefoot, 2010).

Few college instructors have extensive training in design of the learning environment (Fink, 2003). Some individuals though may have had the fortune of going through a teacher-education program at some point in their career (Fink, 2003). The educational preparation of nursing instructors often varies. Individuals having a major in nursing education during a graduate degree would have exposure to guided instruction in the areas of teaching and learning. One problem identified in the literature is that many individuals teaching in nursing programs have a background with a more clinical basis (Bachman, Kitchens, Halley, & Ellison, 1992; McDonald, 2004). These individuals are proficient in the clinical setting, but many have never taken a course or attended a program specifically exploring the various aspects of teaching and

learning. The expectation regardless of educational background is that the instructor be able to perform the functions of the educator role to help guide students towards developing the knowledge, skills, know-how, and attitudes to one day function as a professional Registered Nurse (RN).

Given the lack of formal training for many nurses entering the educator pathway, it behooves one to consider just how many faculty learn to teach. Many individuals enter the educator role often times lacking formal training and essentially replicate the teaching styles they experienced or at some point observed in the classroom (Bachman et al., 1992; McDonald, 2004). For many, a TC style of teaching was the predominant mode experienced with a focus on memorization of content material, repetition of assignments, and recitation of information. Zorek, Sprague, and Popovich (2010), referring to this as “bulimic learning” (p.1), relates this process traps students in a “seemingly endless cycle of memorization and regurgitation” (p. 1) and further ignores the three steps involved in the learning process. These include remembering, thinking, and learning. Bulimic learning diminishes students from developing abilities past the remembering step (Zorek et al., 2010).

A continuing problem is that many faculty continue to rely on these traditional teacher-centered pedagogies (Candela, Dalley, & Benzel-Linley, 2006; Doyle, 2011; Stanley & Dougherty, 2010; Weimer, 2002; Zorek, Sprague, & Popovich, 2010). This is significant because it perpetuates a system which reportedly is underpreparing nursing graduates to function in an increasingly changing health care workplace (Benner et al., 2010). The reliance on TC education practices within schools of nursing has been cited as one of the major reasons leading to nurses being underprepared to enter the workplace (Benner et al., 2010; Stanley & Dougherty, 2010). Doyle (2011) warns that continued reliance on these TC modes of instruction can have negative

consequences for student learning. Huba and Freed (2000) add that TC strategies are not inherently bad for the student, but there are better strategies to enhance learning.

This study evaluates the propensity of faculty use of learning environment design principles as evidenced in course syllabi. As an artifact of the learning environment, the syllabus can offer a glimpse into the nature of the intended learning environment of faculty (Blumberg & Pontiggia, 2011; Cullen & Harris, 2009; Eberly, Newton, & Wiggins, 2001). The hope is that a way could be found to assist faculty in identifying their needs to make the transition to a learning centered approach in teaching. If this occurs, then it may become possible to better address the issues of patient safety i.e. medical errors and patient death (IOM, 1999).

Learning-Centered Teaching

An effective educational approach noted in the literature is the learning-centered teaching (LCT) approach (Bransford et al., 2000; Colley, 2012; Doyle, 2011; Grunert O'Brien, Millis, & Cohen, 2008; Huba & Freed, 2000; Kantor, 2009; Kleiman, 2007; Pardue, 2006; Schaefer & Zygmunt, 2003; Steiner, Hewett, Floyd, Lewis, & Walker, 2010; Weimer, 2002). Doyle (2011) defines "learner-centered teaching as making decisions about what and how students...learn" (p. 2) in the attempt to optimize the opportunities for student learning. Learning environments therefore need to engage students in practices that are "authentic, meaningful, and useful" (Doyle, p. 9). Creating opportunities for students to choose among ways to learn about a topic, structuring courses that places students in a more active role in learning where they perform more work than the teacher, and shifting responsibility for learning to students are central tenants of LCT (O'Neill & McMahon, 2005). Grunert O'Brien et al. (2008) further relate that LCT assists students with acquiring a deep knowledge base and helps develop the necessary process skills which experts tend to use.

In the book, *Learner-Centered Teaching: Five Key Changes to Practice*, Mary Ellen Weimer (2002) offers suggestions that faculty can use to become LC teachers. Weimer's (2002) five changes include (1) replacing the power structure present in a class to require students to make more decisions about their learning, (2) changing the focus of course content to help students develop skills to handle emerging problems, (3) redefining roles where teachers function as facilitators and students function as pursuers of knowledge and solution pathways, (4) shifting accountability for learning to students, and (5) re-characterizing evaluation processes with the concern more so about fostering continued development and not punishing based on performance. Learning environments that engage these processes become ones that are vibrant, responsive, and centered towards learning (Weimer, 2002).

LCT is notable for recognizing both the teacher's and student's roles. The teacher's role includes realizing the student's positioning in learning by understanding that students construct their own knowledge and that learning is enhanced through communication with others (Huba & Freed, 2000). A teacher's job is not to merely give information, but to guide students to where they can mine for information and model how to begin processing or using that information (Huba & Freed, 2000). A LC teacher further realizes that assessment is necessary to differentiate further learning needs and that multiple modes of assessment help assess learning directly. Mistakes that are identifiable can inform future teaching practices (Huba & Freed, 2000). Within learning-centered environments (LCE), teachers expect students to play an integral role in reflection on their own learning approaches and thought patterns (Huba & Freed, 2000). LC teachers realize that approaches to learning need to not limited to one single discipline but be interdisciplinary (Huba & Freed, 2000). Factors influencing learning include culture within the

class environment, collaborative efforts, and a supportive nature reflecting that faculty and pupils learn together (Huba & Freed, 2000).

Weimer (2002) relates that learner-centeredness focuses on “what the student is learning, how the student is learning, the conditions under which the student is learning, whether the student is retaining and applying the learning, and how current learning positions the student for future learning” (p. xvi). Doyle (2001) echoes this statement and adds that learning opportunities need to be “authentic, meaningful, and useful” (p. 9). Teachers that are LC realize that students come to educational settings with acquired “knowledge, skills and attitudes” (Bransford et al., 2000, p.133). Asking students to consider prior experiences while being mindful that a student’s conceptions, practices, and beliefs have cultural basis are helpful when assessing prior knowledge to identify misconceptions in knowing (Bransford et al., 2000). Encouraging activities such as reflection and creating assignments that result in artifacts of students’ learning are examples of strategies LC teachers employ to encourage meta-cognition, to make the student’s knowledge visible, and to enhance motivation (Bransford et al., 2000; Kafai, 2006). Additionally, teachers in LCE pay close attention to the individual progress of each student and devise tasks as appropriate with an ever present focus on responding to gaps in prior knowledge, student ability, and learning preferences (Bransford et al., 2000). The benefit of using LCT strategies is that they improve learning (Doyle, 2011) by helping the student develop the ability to adapt to varying situations, to work in groups to solve problems, and to learn patterns synonymous with those of lifelong learners. Furthermore, the methods inclusive in LCT are consistent with several decades of research in the learning sciences (Bransford et al., 2000).

In the nursing education field, the shift to using learning-centeredness in course design and pedagogical practice has been identified as a potential starting point for transforming nursing

education (Benner et al., 2010; IOM, 2010; NLN, 2003; NLN, 2005; Stanley & Dougherty, 2010). The impetus for this change is the need to better equip nursing students with the knowledge, skills, know-how, and attitudes to be appropriately informed regarding practice issues, to be adaptable to changing situations, and to be agents to lead improvement measures in a health care system that better reflects and supports the needs of nurses system-wide. To accomplish this, there needs to be implementation of LC practices in nursing educational systems and nursing instructors need instruction and support on LC design practices and pedagogies. This may seem straightforward but, one issue Huba and Freed (2000) point out is that many individuals will probably need help as they often have to “unlearn previous acquired teaching habits” (p. 3).

A Way Forward

One potential way to help faculty develop a LC approach is to provide them with tools to assist in course design. Such an instrument should address the many ways individuals learn best. Several examples currently exist regarding how to develop a LC syllabus. First, Grunert O’Brien, Millis, and Cohen (2008) detail a learning-centered approach for syllabus development. In *The Course Syllabus: A Learning-Centered Approach*, Grunert O’Brien et al., (2008) offer an in-depth discussion of the importance the syllabus plays in relating the purpose and nature of courses towards promoting student development. The expectation in learning-centered environments is for students to be actively engaged and involved in all aspects of the learning process to attain outcomes established by faculty and, in some cases students themselves. The “syllabus represents a significant point of interaction [that if] thoughtfully prepared...will demonstrate the interplay of [faculty] understanding of students needs and interests, [faculty] beliefs and assumptions about the nature of learning and education, and [faculty] values and

interests concerning course content and structure” (Grunert O’Brien, Millis, & Cohen, 2008, p. xiv).

A current tool, developed by Cullen and Harris (2009), provides a template for assessing the tendency of syllabi to reflect either teacher-centeredness or learner-centeredness. Under the auspices of assisting administrators with planning professional development courses for faculty, Cullen and Harris (2009) developed the “Rubric for determining degree of learning-*centredness* in course syllabi” (p. 123). The authors advance that the term *centredness* is an inclusive term for the collective nature of the three main categories in the rubric. The rubric assesses for the instructor’s intention to develop community within the class, share power and control between students and faculty regarding course decisions, and students’ use of multiple strategies to improve the chances to attain course learning goals (Cullen & Harris, 2009).

The Cullen and Harris (2009) instrument, is a 12-item rubric. The rubric is partitioned into three main categories including “(1) community, (2) power and control, and (3) evaluation/assessment” (Cullen & Harris, 2009, p. 118). Based on Vygotsky’s theory of social development and social constructivism (Cullen & Harris, 2009), the community category examines the professor’s attempt at creating community within the classroom. The authors define community as the instructors attempt at establishing a sense of purpose and trust within the class and all participants. Two aspects to developing community are relevance or the attempt at providing a rationale for various learning experiences, and accessibility of the professor to the student to enhance student learning. The second rubric category examines the syllabus for its attempt to share power and control. Cullen and Harris (2009) relate that assessing for intrinsic motivation is difficult, but setting the framework for a class that provides students the sense of having control and being given the opportunity to assume power over what takes place within the

course is important for developing intrinsic motivation. Evaluation and assessment is the final rubric category. This category examines both the formative and summative assessment practices within the course and the extent that feedback is reciprocal.

Further analysis of the Cullen and Harris (2009) tool reveals several key elements missing if one is designing a course that is learning-centered. Cullen and Harris (2009) relate their tool as useful to detect the tendency towards the type of design and pedagogical centeredness in course syllabi for faculty interested in shifting pedagogical centeredness. The first key element missing is being responsive to student and class culture. More specifically, the cultural make-up and backgrounds of the individuals in the course, an understanding of student's cultural background as a reference point for considerations in teaching, and the need to include conceptual and cultural knowledge building in the teaching are missing. Second, a need for assessing sense-making or how students' process problems and information and a focus on achieving competence and mastery of content through assessment and evaluation processes is absent. Being attentive to these aspects of learners and how learning is best supported needs attention within classroom spaces.

In a second article seeking to benchmark LC approaches in curricula via syllabi evaluation, Blumberg and Pontiggia's (2011) developed and evaluated an instrument based on Mary Ellen Weimer's five practices of learner-centered teachers. They evaluated syllabi from core courses at one institution for their sample. The instrument further evaluates whether the instructor appears more instructor-centered or learner-centered from syllabus design. Results from 72 evaluations of syllabi identified that overall faculty are not using many learner-centered practices. Syllabi of contingent faculty were found to be more instructor-centered when compared to full-time faculty. Full-time faculty had higher average scores in all of Weimer's

learner-centered practices when compared to contingent faculty. No significant differences were identified using analysis of variance comparing the five different indices. Blumberg and Pontiggia's (2011) noted that according to the findings professional development regarding each area of learning-centered practice would be useful. The dimensions of the instrument do not address collaborative efforts of students with students and students with faculty. Nor does the instrument specifically address a focus on developing a learning-centered culture.

Based on analysis of these two studies, i.e. Cullen and Harris (2008) and Blumberg and Pontiggia (2011), there appears to be a need for a more comprehensive instrument to assess and assist in course design. The next section presents a framework that, if employed in the context of an instrument, can address the apparent gaps noted in available tools to assess course design.

Theoretical Framework

The framework selected for this study was the NRC perspectives on design of the learning environment (Bransford et al., 2000). The NRC perspectives comprise a framework of practice with overlapping and distinct principles. According to the NRC, to enhance student learning, design within learning environment in should be learner-centered, knowledge-centered, assessment-centered, and community-centered (Bransford et al., 2000). These four environments incorporate an aggregate framework to best support how individuals learn. Each of the NRC perspectives is further discussed below and will guide the development of the instrument in this study.

Learner-Centered Environments

LCEs are ones in which teachers appreciate that students come to the educational settings with acquired "knowledge, skills and attitudes," (Bransford et al., 2000, p.133) which inform their understanding of and approach to new material. Much of a student's understandings,

practices, and beliefs have cultural basis (Bransford et al., 2000). Teachers that understand this, pay close attention to the individual progress of each student and devise tasks using applicable instructional practices as appropriate with regard to what the “student knows, cares about, is able to do, and wants to do” (Bransford et al., 2000, p. 136). Considering students “strengths, interests, and needs” (Bransford et al., 2000, p. 192) are paramount to LCEs.

LCEs are underpinned by constructivist theory in learning and adult learning theory. Constructivism is a theory of learning principally attributed to works by Jean Piaget and Lev Vygotsky (Pass, 2004). Piaget most prominently explored cognitive aspects of constructivist theory which maintains that the mind is in a state of “constant transformation [related to] socialization of natural and biological mechanisms” (Pass, 2004, p. xi). According to Piaget, knowledge is formed in and from the mind through a “gradual acquisition of strategies for remembering, understanding, and solving problems” (Bransford et al., 2000, p. 80). Vygotsky’s theory of constructivism relates that knowledge develops through social and historical contexts (Pass, 2004). The influence of history within a culture informs what is taught and how it is taught during a child’s interactions with adults (Pass, 2004). Lastly, Knowles theory of adult learning relates that adult learners “build on...previous experiences and promote active learning” (Brandon & All, 2010, p. 90). Adult learners are generally regarded as “self-directed [and] autonomous” (Ryan, 2005, p. 328). These theories are born out in LCEs.

Knowledge-Centered Environments

Knowledge-centered environments (KCE) attend “to what is taught (information, subject matter), why it is taught (understanding), and what competence or mastery looks like” (Bransford et al., 2000, p. 24). “Knowledge-centered environments intersect with learner-centered environments when instruction begins with the concern for students’ initial

preconceptions about the subject matter” (Bransford et al., 2000, p. 136). Knowledge-centered environments provide “the necessary depth of study, assessing student understanding rather than factual memory” (Bransford et al., 2000, p. 24) and as Brunner relates, “[takes] seriously the need to help students become knowledgeable by learning in ways that lead to understanding and subsequent transfer” (Bransford et al., 2000, p. 136). Additionally, knowledge-centered environments “[incorporate] the use meta-cognitive strategies that further facilitate future learning” (Bransford et al., 2000, p. 24). Teachers with a focus on knowledge-centered learning “encourage doing with understanding,” (Bransford et al., 2000, p. 24) and not just knowledge of how a task is merely performed.

KCEs are girded with a constructivist approach in learning as well. The basic concept is that “people build knowledge, in contrast to merely acquiring it” (Iwasiw, 2009, p. 176). In KCEs the student is positioned as the individual seeking knowledge. Rolloff (2010) offers, the goals of constructivism are the “development of skills in critical thinking, collaboration, and personal inquiry” (p. 291). Teachers incorporating a constructivist approach when designing learning environments introduce “foundational concepts” (p. 291) followed by adding progressively more intricate ones through the learning process (Rolloff, 2010).

Assessment-Centered Environments

Assessment-centered environments (ACE) focus on “ongoing assessments designed to make students’ thinking visible to both teacher and students” (Bransford et al., 2000, p. 24). ACEs not only inform teachers about students’ ideas and judgment ability, but they also provide students with opportunities to see their own evolution, modify and develop their own reasoning, and receive remediation from teachers when necessary (Bransford et al., 2000). Also, ACEs have appraisal designed into instruction (Bransford et al., 2000).

Constructivism theory is incorporated here when knowledge is formed in and from the mind through a “gradual acquisition of strategies for remembering, understanding, and solving problems” (Bransford et al., 2000, p. 80). Brandon and All (2010) extend this definition and include ongoing “accommodation, assimilation, and equilibration” (p. 90). Fully developed ACEs offer formative and summative assessments to inform student and faculty where refinements may need to be made.

Community-Centered Environments

Community-centered environments (CCE) reflect “the context in which [learning] takes place. A community centered approach requires the development of norms for the classroom and school, as well as connections to the outside world, [i.e. the broader community, and supports] core learning values” (Bransford et al., 2000, p. 25). If students are to identify their preconceptions about subject matter, explore pressing questions, and monitor their progress toward understanding, then the norms within the class must support their doing so. Teachers must design classrooms pursuits to help “students organize their work in ways that promote the kind of intellectual camaraderie and the attitudes toward learning that build a sense of community” (Bransford et al., 2000, p. 25).

One of the underlying theories of learning in CCEs is Vygotsky’s social cognitive theory. According to this theory, knowledge develops through social and historical contexts (Pass, 2004). Vygotsky is well noted for articulating of the Zone of Proximal Development (ZPD) (Bransford et al., 2000; Pass, 2004; Rolloff, 2010). According to the ZPD, the individual develops knowledge through the aid of support of peers, adults, and others guiding or responding to them as they navigate various situations (Bransford et al., 2000). Additionally, the meanings individuals attach to events are enhanced culturally, suggesting they are influenced by what is

socially known and historically passed down (Bransford et al., 2000). One other important concept attributed to Vygotsky is scaffolding (Pass, 2004; Sawyer, 2006). Pass (2004) relates that Vygotsky did not actually use the term scaffolding, but he did theorize the idea. Essentially, scaffolding is where situations are designed with differing degrees of structure thereby encouraging the individual to engage a problem using his or her own strategies. As individuals increase in abilities, the scaffolding, or structured support, is gradually reduced to allow the individuals to function on their own (Pass, 2004; Sawyer, 2006).

Alignment of Learning Perspectives

The final component of the NRC (2000) framework is alignment. Ensuring that LED reflects the perspectives of learner-centeredness, knowledge-centeredness, assessment-centeredness, and community-centeredness can improve the chances students will successfully learn and has the potential to accelerate student learning (Bransford et al., 2000). Alignment of four learning perspectives within the framework is important because it allows teachers opportunities to decide when and what to assess regarding select student learning outcomes (Bransford et al., 2000). Additionally, use of a framework allows for specific process assessment. Bransford et al., (2000) offer that evidence suggests people learn in a more robust manner organizing knowledge around organizational frameworks.

John Dewey's (1966) ideas on the nature of method in education and Jerome Bruner's (1963) ideas on the importance of process in education create an underlying basis for the alignment component of the NRC framework. Dewey (1966) argues that method and subject matter are intertwined. Method provides an "effective direction to subject matter to desired results" (p. 165). Bruner (1963) adds that there are four themes integral to the process of learning including "the role of structure in learning and how it may be made central in teaching" (p. 11),

“readiness for learning” (p. 12), “the nature of intuition” (p. 13), and “the desire to learn and how it may be stimulated” (p. 14). Bruner (1963) asserts that “learning should not only take us somewhere; it should allow us later to go further more easily” (p. 17). Several components of structure are important. Bruner (1963) adds that learning in the context of an authentic situation is best, knowledge needs to be made usable past the current situation, and if knowledge is not tied to structure then it is likely to be forgotten. To this end, Bruner (1963) introduces the concept of a “spiral curriculum” (p. 53) which provides shape or framework where broad concepts or ideas can be introduced and built upon as revisited.

Problem Statement

Missing in the shift towards the adoption of more learning centered approaches to teaching and learning in nursing education is a lack of a clear and efficient way for faculty to assess decisions regarding learning environment design practices.

Statement of Purpose

The purpose of this research project is two-fold. The first purpose is to conceptualize a rubric for syllabus evaluation based on the framework regarding the learning environment design principles of the National Research Council (Bransford et al., 2000). The creation of the rubric leads to the second purpose of the study which is to use this rubric to investigate the propensity of nursing syllabi for their overall reflection of LED principles by evaluating whether similarities and differences exist between syllabi originating from Public Doctorate-granting Universities versus Public Master’s Colleges and Universities.

The results from the analysis of syllabi using the rubric will provide both summative and formative information. The results will be summative in that they will describe how syllabi are or are not aligned with the theoretical framework in purpose statement one. The results will be

formative in that they identify areas in the syllabus that are weak which can be readily addressed and areas of the syllabus that may require serious redesign considerations. Additionally, being able to evaluate a course syllabus by employing a rubric to identify learning design elements should offer a helpful adjunct for faculty attempting to transform their teaching practices and better design courses to address the learning needs of students. Ultimately, the beneficiaries of this instrument will be the student nurse, the practicing nurse, and the patient as the improved educational practice leads to improved professional practice.

Significance

1. The evaluation of LED has received little attention in nursing. The extent to which nursing classes follow the LED principles is not really known. This research study is significant because it has potential to add to the body of nursing literature knowledge in this area.

2. This research study has potential to add a clear and efficient mechanism i.e. rubric, to assess whether LED principles are reflected in course syllabi. A rubric of this nature may be beneficial to help guide faculty when developing and evaluating syllabi.

3. Use of this rubric may be a helpful component for faculty seeking to become more informed regarding learning-centered practices in course design.

Research Questions

This research project investigated whether similarities and differences exist between nursing syllabi at Public Doctorate-granting Universities versus Public Master's-granting Colleges and Universities when examining for propensity in reflecting learning environment design principles using the Learning Environment Design Rubric for Syllabi (LED-RS). The project sought to answer the following research questions (RQ):

RQ 1: *To what overall extent do nursing didactic course syllabi reflect the propensity for being learning centered?*

RQ 2: *Is there a difference between nursing programs at Public Doctorate-granting Universities versus Public Master's-granting Colleges and Universities when nursing didactic course syllabi are evaluated for being learning centered?*

RQ 3: *Is there a difference between the faculty characteristic of degree held and propensity for nursing didactic courses being learning centered?*

RQ 4: *Are certain nursing didactic courses more learning centered than others?*

Summary

The increasing complexity of the healthcare environment due to scientific discovery and societal demands has broken through the limits of the current nursing education system and requires the need for change in the education process to better prepare nurses entering the workforce (NLN, 2005). LC pedagogies which follow adult learning principles have been shown to enhance the learning of students and are recognizable as essential in assisting students to develop the sense of adaptability and salience required to practice as new nurses (Benner et al., 2010). Literature in nursing on the adoption of learner-centeredness into nursing education practice is limited in breadth and scope. The course syllabus is an artifact of learning environment and has been identified as a potential area for assessing faculty practices (Blumberg & Pontiggia, 2011; Cullen & Harris, 2009; Eberly et al., 2001). To help faculty transition to a more LC style of teaching, it would be beneficial to have an assessment tool, i.e. rubric, to guide faculty to develop syllabi based on evidence-based LED principles. Learning environments need to be designed so students may draw upon prior knowledge, develop organizational frameworks for new knowledge, and use metacognitive strategies when approaching new material (Bransford

et al., 2000). Learning environments designed to reflect the complement of learner-centeredness, knowledge-centeredness, assessment-centeredness, and community-centeredness have the potential to accelerate student learning (Bransford et al., 2000).

CHAPTER II

LITERATURE REVIEW

Throughout the past decade, increasing numbers of teachers and researchers have been professing the benefits of using LC strategies to enhance student learning. Use of these LC practices is not only resulting in improvement in student performance, but further translating into students who are better equipped with problem solving abilities and more amenable for life-long learning as needs arise.

This chapter provides a broad review of literature regarding the topic learning-centered. The timeframe for this literature review includes the years 2002 through 2013. The online databases searched include the Cumulative Index of Nursing and Allied Health Literature (CINAHL) Plus with Full Text, Education Resource Information Center (ERIC), and ProQuest Nursing and Allied Health. The following descriptors employed in this review include “learning centered” and “nursing.” Among the databases seven books, 112 articles, and four abstracts were identified and examined as part of this review. There are additional periodicals which lie outside this time frame which are incorporated in this review to extend understanding.

Overview of Findings

Several themes regarding the topics of learning-centered and nursing have been emerging in the literature over the past decade. A discussion of each of these themes is necessary to appreciate the breadth of information available and current limitations of the content. This chapter is separated into 11 distinct sections. The first three sections explore literature on the learning paradigm, the significance of collaborative experiences for learning, and the importance

for students to assume more control or responsibility for learning. The next three sections explore findings on literature regarding assessment and evaluation in LC environments, current teaching and learning strategies used in LC environments, and a brief exploration of what it means to be a LC institution. The next three sections discuss current problems experienced when using LC approaches, fostering faculty development to function in LC environments, and how to help students learn to operate in LC environments.

The final two sections present various frameworks and models used to employ learning-centeredness in course, curricular, and administrative / institutional designs and a theoretical framework, the learning perspectives framework of the NRC (Bransford et al., 2000), which offers the most comprehensive option to implement LC design. A table summary of the meta-analysis of the various framework / models will be offered depicting how they currently are aligned or not aligned with the learning perspectives framework of the NRC (Bransford et al., 2000).

The Learning Paradigm

A paradigm, according to *Merriam-Webster's Online Dictionary* (2013), is “a philosophical and theoretical framework of a scientific school or discipline within which theories, laws, and generalizations and the experiments performed in support of them are formulated; *broadly*: a philosophical or theoretical framework of any kind.” The learning paradigm, therefore, is broadly attributed to years of inquiry into learning and the tenants observed which best support learning.

In 1995, Barr and Tagg offered some initial thoughts in an essay regarding an emerging learning-centered paradigm realizing influence in undergraduate education in the US. In *From Teaching to Learning--A New Paradigm for Undergraduate Education*, Barr and Tagg (1995)

explore the tenants of the learning paradigm. From their discussion we can begin understanding the various natures of two competing paradigms on teaching and learning: the instruction paradigm and the learning paradigm. They argued that constraints of the dominant “instruction paradigm” (Barr & Tagg, 1995, p. 12), which positions teachers as tellers of knowledge and students as passive recipients of information, was notably being challenged by faculty citing improvement in student learning related to LC strategies and course design. They begin their explanation by offering differences in relation to six dimensions including (1) mission and purpose, (2) measurement of success, (3) structure of teaching and learning, (4) the theories of learning underpinning the paradigms, (5) productiveness as noted in students and funding for learning, and (6) the roles faculty and staff play.

The first dimension relates to the mission and purpose. “The [l]earning [p]aradigm shifts what the institution takes responsibility for: from quality instruction (lecturing, talking) to student learning” (Barr & Tagg, 1995, para. 14). The second dimension is in regards to the measurement of success. College success is not related to resources that colleges make available. Success in the learning paradigm is denoted by the attainment of learning outcomes as noted through assessment practices. The third dimension is the structure of teaching and learning. The instruction-paradigm has unique structures. These include distinct classes and times these classes are held. They are often structured in minutes, days, and weeks. Teaching and learning are seen as discrete entities as well and must occur during regulated times. In the learning paradigm, time does not govern learning. The structures become “dispensable and negotiable” (Barr & Tagg, 1995, para. 47). The learning paradigm is that new structures and teaching methods evolve constantly to enhance learning outcomes.

The fourth dimension is in regards to the theories of learning underpinning the paradigms. The instruction paradigm favors knowing specific content. The learning paradigm favors knowing ways of learning and developing skills such as being a collaborative learner and taking responsibility for what one knows. The fifth dimension is in regards to the productiveness noted in students and funding for learning. The instruction paradigm focuses on the teacher doing more in this environment i.e. teaching more students or classes. A problem which arises is that there becomes a threat to teaching and learning because of increased student-to-teacher ratios. In the learning paradigm the student produces the work and their own learning. Their learning can be exponential in this case.

The sixth dimension is in regards to the roles faculty and staffs play in the opposing paradigms. In the instruction paradigm, faculty are viewed as content experts and function as “a sage on a stage” (Barr & Tagg, 1995, para. 79) telling students what they personally know and what students need to know. This paradigm precludes students being able to engage problems and develop reasoning and skills necessary to solve issues. Additionally, staff members focus on students achieving learning outcomes and work to identify and diminish inhibitory problems. Barr and Tagg (1995) conclude their article with a discussion of issues regarding transitioning to the learning paradigm.

In their book on LC approaches in assessment on college campuses, Huba and Freed (2000) add to the understanding of the learning paradigm by offer a helpful comparison of nine areas of difference between teacher-centered and learner-centered teaching styles and pedagogical choices. The first difference is in regards to the acquisition of knowledge. TC teachers see themselves as ones who should tell the students what they should know. Students are like empty vessels which passively receive that knowledge. LC teachers come with the

mindset that students construct their own knowledge and that active involvement in problem solving enhances learning. Second, emphasis regarding how individuals develop knowledge is different. TC teachers emphasize acquiring knowledge without consideration of the context within actual practice. LC teachers encourage knowledge development through engaging emerging issues or situations closely mimicking real life ones. The next difference is in relation to the role of the teacher in the classroom. TC teachers see their role as givers and evaluators of information. LC teachers see themselves as facilitators of learning and that students and teachers are equally active participants in evaluation.

Fourth, there is a difference in the relationship between teaching and assessment. TC teachers see teaching and assessment as separate, whereas LC teachers see the relationship as intertwined. A fifth difference is in relation to the purpose and emphasis of assessment. TC teachers use assessment to monitor learning by emphasizing correct answers. LC teachers use assessment to promote and diagnose learning with an emphasis on generating better questions and learning from mistakes. A sixth difference is how desired learning is achieved. In TC classes, desired learning is measured in some sort of objectively scored assignment, whereas in LC classes students create projects that might model situations they see in practice. Next, there is a difference in focus regarding how problems are solved. In TC classes, teachers ask students solve problems from a single disciplines viewpoint. In LC classes students are asked to view problems from multiple lenses which may engage multiple disciplines. An example of this occurs in simulation lab on many medical school campuses. Many schools now have medical students, nursing students, and lenses which may engage multiple disciplines. An example of this occurs in simulation lab on many medical school campuses. Many schools now have medical students, nursing students, and pharmacy students engage simulation patient encounters together.

They share findings and solving authentic type problems together. This opportunity to witness how others solve problems using discipline specific strategies and goals can help broaden ways of thinking about issues. An eighth notable difference relates to the style of culture developed teachers attempt to develop in the classroom. TC classes are competitive and individualistic in nature, whereas LC classes require students to be cooperative and collaborative. A final difference is in regards to who is positioned as the learner. In TC environments only students are considered learners, whereas in LC classes teachers and students learn together.

The tenants of the learning paradigm have found many eager proselytes including ones in nursing such as Candela, Dalley, and Benzel-Lindley (2006) and Stanley and Dougherty (2010). Candela, et al. (2006) purport “the benefits of learning-centered approaches to nursing education to help educate nursing students for the health care environment of the 21st century” (p. 60). Candela et al. (2006) relate that students today live and learn in a rapidly changing environment fueled by an explosion of technological advances and “passive, one way transmission of knowledge that served earlier generations of nursing students is inadequate in preparing current students to meet the challenges they face in today’s complex health care systems” (p. 60). Candela et al. (2006) supply a four-step process for guiding curricular decisions including implementing “real-life situations and practice” (p. 62) to aid in knowledge transfer, “shifting curricular focus to student learning” (p. 62), re-tooling teachers for these environments, and “integrating assessment into the curriculum” (p. 62). The authors outline six broad areas to help frame learning outcomes including communication skills, social skills for multidisciplinary environments, critical thinking abilities, types of problems to be prepare individuals for managing real-life clinical occurrences, identifying concepts and principles necessary to apply, and focusing on the values and ethics necessary for professional practice. Finally, the authors

suggest instilling authentic assessment practices to assist students learning. Developing students to self-assess provides them “with a better understanding of how to improve their abilities and performances” (Candela et al., 2006, p. 65).

Stanley and Dougherty (2010) also advocate for a paradigm shift in nursing and suggest a redesign in nursing education curriculum towards implementing a model designed on “best pedagogical practice” (p. 378). Stanley and Dougherty (2010) add that this new model should focus on “three key concepts: the learner, the instructor, and outside learning modalities” (p. 378). In 2005, the National League for Nursing (as cited in Stanley & Dougherty, 2010) challenged nurse educators to shift their perspective regarding teaching away from the teacher-centered or instruction-centered philosophy. New models of pedagogy better encourage learning and critical thinking development. In a LC paradigm, “learners are not just students, but represent consumers of education. They come with real-world experiences and preexisting ideas that are the foundation for their learning in and outside the classroom” (Stanley & Dougherty, 2010, p. 379).

In the next few sections, an exploration of literature from the previous decade regarding some of the central tenants of the LC paradigm i.e. collaborative learning, assessment and evaluation practices, and pedagogies should help broaden understanding through the advancing application.

Literature on Collaborative Learning in Learning-Centered Environments

One theme noted from the literature on learning-centered teaching and learning is collaborative learning. Collaborative learning is a type of learning which “takes place as individuals engage with each other, inquire of those with skills and expertise, and use resources and tools that are available in the surrounding environment” (Bransford et al., 2000, p. 279).

Dewey (1963), in his book *Democracy in Education* explores how knowledge develops in learners. In the section on “The Development of Subject Matter in the Learner” (p. 184), Dewey (1963) relates that knowledge accrues through our “intercommunication” (p. 186) with others. In other words, knowledge is developed through collaboration and sharing of ideas. As previously noted, Vygotsky’s social learning theory speaks to the importance of learning in conjunction with others (Pass, 2004). Several examples from the literature in the past decade elucidate the benefits of collaborative learning. These findings further support the need for collaborative learning opportunities to be designed into these learning environments.

The Need for Collaboration

The ability to collaborate is an important skill students need to acquire and should be part of educational experiences. Collaboration is important because in addition to the benefits these experiences offer in building a broader knowledge base; it can add a sense of community or belongingness which in the long run can mean success or failure in a program of study. As noted previously, learning in collaboration may create some problems as Vygotsky noted when he discussed the concept of error (Pass, 2004). In the context of the education system, savvy teachers who pick up on misinformed knowledge or problem solving systems can correct these issues as they arise.

In his essay, *Servant Class: Basic Writers and Service Learning* (2005), Don Kraemer discusses writing within the service learning paradigm, issues with students development of beneficial habits from writing, and his realization of a problem with writing *for* the community. Kraemer (2005) relays the three ways of writing within the service learning paradigm include writing *about*, *for*, and *with* the community. Writing *about* and *for* tends to not help students achieve what is hoped for in service learning, that is a deeper engagement and connection to a

community problem. In these types of writing assignments – *about* and *for* – students will engage the writing process, but, as Kraemer (2005) notes, often do not make great strides in changing their views on writing – which traditionally is about receiving a grade. The crux of his argument is that that writing *with* the community in basic writing exercises encourages students to view themselves in the problem, being more connected to the concern, and enhances student’s reflection upon community problems.

In an essay, Albertine (2012) presents an overview and plea for embracing the Liberal Education and America’s Promise (LEAP) initiative of the Association of American Colleges and Universities (AAC&U). The “initiative is devoted to the well-being of colleges and universities [and] a fundamentally democratic vision for school to college alignment” (Albertine, 2012, p.62). She argues that “[a]s the learning outcomes movement continues to gain strength in postsecondary education, it is high time to think again about continuity and collaboration within schools” (Albertine, 2012, p. 62). In an attempt at maintaining the values and benefits of a liberal education for all, educators from public schools and higher education institutions need to communicate and collaborate regarding policy and practice and design more efficient and effective learning by connecting and aligning kindergarten through college curriculum.

An example of Albertine’s (2012) vision is evident in a study by Matoba, Shibata, and Sarkar Arani (2007). Matoba et al. (2007) report on a three-year collaborative project between two Japanese institutions: Tokai City Board of Education and Nagoya University. The goals were centered on implementing a learning-centered philosophy in a broad approach to create schools that learn, to develop supportive, collaborative learning environments for teachers, to support an approach to teaching which is centered on problem solving, and to produce an organized framework for learning. The authors employed a mixed methods approach. Student

achievement improved as evidenced by improvement in grades, improvement in motivation for preparation for class, and improvement in school attendance. Students' perception of school changed towards more positive feelings of school. Students and teachers reported feeling the other was improving in efforts to learn and teach, respectively. Positive qualitative responses from teachers and administrators confirmed development of a culture of learning and that a learning-centered philosophy can be implemented.

Finally, in an analysis of individuals involved in completing a doctoral degree in social work, Liechty, Liao, and Schull, (2009) identify influences towards dissertation completion and features of successful students. Three major influences on dissertation completion were noted including possessing the knowledge, skills, and motivation to finish the process, having a planned curriculum to develop the necessary skill-set, and having the mentorship of a chair or experienced colleague during the process.

In summary, collaborative learning experiences not only help students develop a connection with other students, but with one's community as well, (Kraemer, 2005). These experiences have the propensity to situate the student in problems (Kraemer, 2005), develop skills of collaboration which will be necessary during future endeavors (Kraemer, 2005; Liechty, Liao, & Schull, 2009), increase positive student feelings regarding school, enhance feelings of respect in students and teachers towards each other regarding efforts regarding learning (Albertine, 2012; Matoba et al. 2007), and have the potential to improve the probability for student graduation (Liechty et al., 2009).

Creating Community

A difficult task many instructors face is developing a community of learners in one's classroom. Some of the benefits of collaboration are apparent, but buy in from faculty and

students are hampered in many respects. Bad experiences and poor implementation of collaborative processes are a few of the problems, but there are examples in the literature that can help alleviate some of the existing issues. One abstract discusses the benefits of connectiveness and civility which impact student learning (Rieck & Couch, 2007). One article explores using web based technologies to create learner centered experiences (Petrides, 2002). One article evaluates the redesign of a large lecture course into one that employs small groups (Ferreri & O'Connor, 2013). One study looks at collaborative learning among teachers involved in a curricular redesign (Allen, Erickson, Brookhouse, & Johnson, 2010). One study looks at reasons why learning-centered initiatives to create collaborative learning either fail or succeed (Schechter & Ganon, 2012).

Rieck and Couch (2007) studied nursing students (n=96) enrolled in online courses in regards to connectiveness and interaction practices. Using a questionnaire, Rieck and Couch (2007) identified strategies for enhancing student-to-student and student-to-faculty connectiveness, examples of potential issues which might arise, and how to manage incivility in online courses. Findings to enhance student-to-student connectiveness include face to face activities and online assignments which require group discussion. Findings to enhance student-to-faculty connectiveness include on time response from faculty. Uncivil responses were noted among students at an average of 35 % and from instructor to student at a 60 % average. The authors suggest course rules should be posted, avenues for addressing issues should be in place, and disciplinary guidelines should be made available ahead of time.

In Petrides (2002) study on the use of a web-based instructional technology for enhancing student-to-student discussion and its perception on learning in a distributed learning format in a graduate level course, the author asked students whether this technology asserted more of a

teacher-centered versus learning-centered like education. Students reported a more learning centeredness to this type of course setup and applauded the enhanced engagement with other students and the teacher. They felt conditions were developed to encourage student engagement on their own and in conjunction with others further making it learning centered. Also, students reported feeling more confident about speaking up in face-to-face class due to the ability to express their opinion on the discussion board. Some criticism was noted by students who saw this technology as more of the same. If the class and online discussion format were both designed around discussion of class topics then no benefit to having the technology was noted. Another issue offered was that if a class were solely based on this web-based instructional technology then it would be “inflexible” (p. 73) and would not be learning-centered (Petrides, 2002).

Ferreri and O’Connor (2013) explored the effects on student grades and course satisfaction in relation to a course redesign of a large lecture class into a small-group learning class. Outcomes revealed students had more opportunities afforded to engage discipline specific problems and to develop skills necessary for practice in a community practicing pharmacist role. Student grades improved when compared to traditional course teaching strategies which included lecture and immediate response system questions using clickers. Student satisfaction results decreased even though the efforts were aimed at making them better prepared (Ferreri & O’Connor, 2013).

Allen, Erickson, Brookhouse, and Johnson (2010) report on an information technology experience introduced in Maine with the intent of emphasizing use of technology, creating a sound pedagogical curriculum, and increasing content of the field of ecology in middle school curriculum. In addition, the project planned to address constraints in middle school curriculum

where programming on computers is not taught and add to the existing science simulation software “the capability for students to program their own simulations,” (Allen et al., 2010, p. 36) otherwise known as an experiential component. Driven by a reality that teachers have an inherent challenge to integrate computers into curriculum and students are becoming increasingly competent in computer use and have increasing expectations of learning experiences, research designers attempted to focus on teacher development while developing an inquiry based software program to increase learning centeredness in classrooms and develop the autonomist nature in student. The “EcoScienceWorks Project” (Allen et al., 2010, p. 37) engaged Maine middle school teachers (n=23) over a three year span to develop, implement, and evaluate the inquiry based modules. Results regarding teachers identified “gains in technology skills, new knowledge in the use of simulations in teaching, positive changes in pedagogy... increased content knowledge[,] improved teacher skills in establishing a learning centered environment in the classrooms and the emergence of teacher leaders” (Allen et al., 2010, p. 38). Qualitative reports on students revealed an increase in ability to be autonomous and that “software promoted perseverance even in low functioning students” (Allen et al., 2010, p. 41).

Schechter and Ganon (2012) report their qualitative study of teachers and principals regarding overall sustainability of education reforms implemented. Specifically, study authors looked at reasons why initiatives such as one that attempts to enhance a learning-centered approach to teacher learning through collaboration either failed or succeeded. Six major themes surfaced from analysis of interviews. These include “the superintendent’s role, the principal’s role, the need for a structured learning setting, the burden added to teachers’ workload the overuse of theory and underuse of practice; and the congruence with the school’s agenda” (Schechter & Ganon, 2012, p. 739-740). The authors summated that individuals in charge that

supported initiatives in belief and practice often had successful outcomes. Also, if the teachers' workload was not distributed to allow for additional assignments not to burden them then outcomes were successful. If practices were merely discussed and not implemented then outcomes were unsuccessful. Finally, if the agenda of the school or individual in charge was not aligned with education reforms, then outcomes were unsuccessful.

In summary, collaborative experiences using web based technology to facilitate collaboration can increase connectiveness of students and faculty, but incivility among individuals can still occur (Rieck & Couch, 2007). Posting guidelines in a syllabus though can alleviate resolution of these issues (Rieck & Couch, 2007). Also, web based collaborative experiences can foster students speaking up in class, but students voice concerns regarding this possibly being redundant (Petrides, 2002). As a sole method of collaboration, web based discussion can be "inflexible" (Petrides, 2002, p. 73) Collaborative efforts may improve skills and grades, but may not increase satisfaction levels of students (Ferreri & O'Connor, 2013). Collaborative experiences for teachers can lead to gains in developing skills and knowledge in teacher practice (Allen et al., 2010). Administrative support, allowing modifications in teacher's schedules to engage collaborative experiences, and requiring collaborative experiences as an outcome measure can lead to sustained efforts for collaboration (Schechter & Ganon, 2012).

Perceptions of Collaboration

How individuals perceive a situation often dictates how they respond to it. This seems to hold true in the classroom setting as well as students often state they dislike collaborative learning. In the US, a society that seems to place a lot of significance on being independent and free, collaboration may be viewed as less than or a skill that does not need to be developed. This

is because it does not foster independent thinking. It may be seen as different from what their conventional education scaffold them into.

Literature over the past decade regarding student perceptions of collaboration offer a unique perspective into what is and is not perceived as beneficial. One study explores student's perceptions regarding a collaborative clinical education model in nursing (Henderson, 2006). Another study explores current pedagogical practices in nursing regarding communication (Boschma et al., 2010). A third study offers there may be a misunderstanding on the part of students as to what a collaborative experience actually is (Popkess & McDaniel, 2011). A final study explores shifts in student's beliefs regarding how they imagine and approach teaching following peer facilitator experiences (Streitwieser & Light, 2010).

Henderson (2006) studied undergraduate student's perceptions regarding a collaborative clinical education model. Faculty advisors were assigned to nursing units with a group of students and students were placed with nurses on the unit. This model was compared to students only being placed with mentors on the unit. Henderson (2006) found students more positive about having a roving faculty who rotated among several units. This allowed students to interact and report on findings and problem solve with faculty as well. Results were significant when comparing pre-test and post-test scores in the test group specifically in the areas of student involvement, satisfaction, personalization, and task orientation. This type of collaborative learning experience was felt to create positive outcomes.

Boschma and colleagues (2010) explored current pedagogical practices in nursing regarding communication to better understand the dynamics of communication education. Their aim was to explore faculty and student experiences to help identify ways to improve teaching communication in undergraduate nursing curricula. A qualitative study was performed using

focus groups including students (n=6) and faculty (n=12). Learning how to effectively communicate with others was identified as an integral component and skill to be developed for nursing practice. Both groups reported a need to have communication components embedded throughout nursing curriculum. Although faculty reported they incorporated communication content using differing strategies at varying degrees they did report they were inconsistent across the curriculum. Faculty and students felt the components of communication need to be better articulated and made more visible. There was a difference between faculty and student responses regarding use of multiple teaching and learning strategies. Faculty felt they used more strategies compared to student report. Faculty reported a “need for additional teaching aides to support communication content delivery” (Boschma et al., 2010, p. 8). Both groups identified a need to have advancing levels of communication education integrated through the curriculum.

Popkess and McDaniel (2011) compared student levels of engagement among nursing, education, and other health profession students. To accomplish this, the authors performed an analysis of data collected in 2003 by the Indiana University Center for Postsecondary Research. Using one-way ANOVA and Tukey’s post hoc analysis, study authors found significant differences between nursing and education students in the domains of level of academic challenge and active and collaborative learning (Popkess & McDaniel, 2011). Multivariate analysis of variance was used on the significant domain findings. The authors conclude that nursing students may be in education systems that predominately rely on teacher-centered pedagogies and lack of exposure to many active and collaborative learning experiences that many of the education majors often have. Interestingly, nursing students perceive they were more significantly academically challenged when compared to other groups. Students self-

reported they studied and were involved in more community based learning more than education majors.

Finally, in an article regarding undergraduates teaching undergraduates, Streitwieser and Light (2010) explored shifts in students' beliefs on how they imagine and approach teaching following peer facilitator experiences. This study was prompted by the finding that little is known of how teaching opportunities change the mindsets of student facilitators. Qualitative analysis of student (n=19) interviews revealed two distinct conceptions and approaches towards teaching. First, there are practice- or teacher-centered (facilitation-centered) individuals (n=12) that focus on covering content. Second, there are learning- or learner-centered (student-centered) teachers (n=7) which concentrate on how students learn or develop understanding of the material. Each of these teaching types stems from how these study participants philosophical view of the role of the teacher. In Figure 1, the authors distinguish specific attributes including conceptions and approaches in teaching, for of each teacher type. Prior to teaching, 12 participants self-identified as teacher-centered and seven self-identified as learner-centered in conception and approach. The participants were interviewed two times over the course of a year. Interview results found that five of the initial 12 study participants who self-identified as teacher-centered shifted to a learner-centered conception and approaches in teaching after teaching experiences. Seven individuals remained teacher-centered and persisted with belief that reviewing basic material was best. Four of the initial seven study participants who self-identified as learner-centered remained learner-centered but shifted in belief that reviewing basic material was best. Three individuals remained learner-centered and persisted with belief that enhancing conceptual understanding was best. The authors concluded that over time, peer led collaborative teaching experiences may increase an individual's tendencies to shift in approach as a teacher,

and may cause them to shift from a teacher-centered to learner-centered conception of teaching, but no evidence was found that over time an individual would shift from a learner-centered to a teacher-centered conception in teaching.

In summary, collaborative learning experiences can help to enhance student involvement, increase satisfaction during clinical experiences, develop personal interaction, and improve task orientation (Henderson, 2006). Although students and faculty report feeling collaborative experiences to improve communication needs to be incorporated into learning situations, differences do exist between student and faculty perceptions of what collaborative communication experiences actually are (Boschma et al., 2010). An open discussion at the beginning of a course could alleviate some of the misperceptions. A discussion of this type might assist students and faculty in realizing what collaborative experiences exist, a problem noted by Popkess and McDaniel (2011). Lastly, collaborative experiences can influence change in individuals as noted in pre service teachers becoming more learning-centered (Streitwieser & Light, 2010).

Literature on Responsibility / Control in Learning

Responsibility was acknowledged by Dewey (1966) “as an element in intellectual attitude” (p. 178) whereby an individual sees something to its end. He referred to the term responsibility as “intellectual thoroughness” (p. 179). Being responsible means to firmly feel a sense of purpose which is internally “imposed and directed” (Dewey, 1966, p. 179). Individuals writing on LC teaching use the terms power and control (Weimer, 2002; Doyle, 2011) in regards to who is in charge or is responsible for learning. In TC classes the instructor is in the position of power and control and tends to use pedagogies that position the teacher as the responsible entity for learning. As previously noted, TC teachers tend to dispense knowledge as their main

pedagogical approach (Candela et al., 2006; Doyle, 2011; Stanley & Dougherty, 2010; Weimer, 2002). In TC classes instructors often expect students to be responsible for their learning, but as Weimer (2002) and Doyle (2011) point out there seems to be a philosophical disconnect with students being able to assume responsibility for learning since the teacher uses pedagogies of the instruction paradigm. The one responsible for the classroom space remains the teacher. In TC environments when students are scolded because they seem to be not taking responsibility, they are positioned in a space by pedagogies where they are not allowed to be “intellectually thorough”.

In the literature on Responsibility/Control in learning during the last decade, four empirical studies have been performed. One study evaluated student’s readiness to engage in self-directed learning, one study assessed the influence specific types of teaching methodologies have on preservice teaching students choice in teaching strategies, and two studies evaluated student’s perceptions of having more control over their learning environment.

In a study evaluating student’s readiness to engage in self-directed learning Kocaman, Dicle, and Ugur (2009), using the Self-Directed Learning Readiness Scale on five different occasions, evaluated nursing student (n = 50) development of self-directedness over the span of a four semester sequence of courses. Kocaman et al. (2009) conclude that the results of repeated measures analysis of variance with Bonferonni correction identified “student perceptions of self-directed learning readiness increase with time [and] becoming self-directed is a maturational process” (p. 289).

In a study on the influence specific types of teaching methodologies have on pre-service teaching students Sariscsany (2005) evaluated 50 students in regards to their confidence in employing learning-centered methods in teaching upon using strategies that engaged creative

problem solving. Individuals that had higher levels of self-efficacy on the Teacher Efficacy Scale were statistically ($p < .05$) more inclined to use learning-centered methods and attributed this to use of active learning methodologies.

Two studies reported on student's perceptions of having more control over their learning environment. In the first paper, Garside, Nhemachena, Williams, and Topping (2009) evaluated student's ability to choose a self-assessment method which best reflects their learning during a continuing professional development program for registered nurses. Garside et al. (2009) purport that "[c]hoice of assessment gives ownership and responsibility to the student" (p. 143) and is "in keeping with the philosophy of adult learning" (p. 147). Three cohorts of students were evaluated. A self-report questionnaire was developed including qualitative response items and biographic questions. Initially students reported mixed feelings regarding having to make a choice in assignment. A majority of students did report feeling comfortable in making an assessment choice. Students reported the comfort level translated to higher achievement and improvement on exams. Garside et al. (2009) do offer that there is some concern regarding the need for exposure to multiple forms of assessment, especially when students need to develop an array of skills. Assessment should therefore mirror practice in the case for nurses.

Harpe and Phipps (2008) evaluated pharmacy student's perceptions of a drug literature evaluation course redesigned to offer students increased control of the learning environment. Prior courses had only multiple choice type examinations. The redesigned course offered multiple types of assessments along with group work. Students ($n=102$) were evaluated via survey method. Stress levels in the course were notably decreased as students felt a sense of increased control in learning when compared to traditional course design. Multiple opportunities for learning were felt to be positive. Students did report that they spent less time preparing for

class and exams because they felt they did less traditional modes of preparation such as “reading over notes [and] rewriting notes” (Harpe & Phipps, 2008, p. 4). Around 11% of students did not like the learning-centered methods associated with the course. These students wanted more guidance. The authors offer that student completion of assignments at the end of the semester decreased once students knowingly had achieved a B in the course.

Literature on Assessment and Evaluation in Learning-Centered Environments

Traditional use of assessment practices tends to only measure what students know. In their book, *Learner-Centered Assessment on College Campuses: Shifting the Focus from Teaching to Learning*, Huba and Freed (2000) expand on how assessment practices of students on college campuses need to focus on not just what a student is learning, but how the student is learning. This is a central tenant of the instruction or learning-centered paradigm (Barr & Tagg, 1995).

Literature regarding assessment and evaluation from the past decade on this topic offers insight into just how these practices can be beneficial in the development of student and teacher knowledge and improve each of these groups ways of thinking. Two articles explore assessment of student performance (Clark & Rust, 2006; Niemi, Baker, & Sylvester, 2007), two articles explore principal performance (DuFour, 2002; Sun, Youngs, Yang, Chu, & Zhao, 2012), and one study explores the benefits of a multi-method approach to evaluation (Mohanty, Gretes, Flowers, Algozzine, & Spooner, 2005).

The first article on how to assess performance in students, Clark and Rust (2006) report on use of a “simple heuristic” (p. 73) to improve pre-service teacher education experiences by integrating a learning-centered approach. This study involves the creation and implementation of a tool to “invite narrative and reflection...opportunities” (p. 74) of the associated stakeholders to

enhance student development towards achieving learning outcomes. Assessments occur during preparation of the assessment activity, during the activity, and after measurable findings are available from the activity. Assessment findings offer opportunities for learning for involved individuals. This is helpful as the authors point out the weak area of interaction seems to be “between the cooperating teachers and the student teaching supervisors” (Clark & Rust, 2006, p. 78). In addition to creating visible artifacts of individual’s thoughts, this process facilitates “a cultural shift from a relatively unconnected faculty model to a team-oriented model of faculty organization and cooperation” (Clark & Rust, 2006, p. 78). The authors hope that graduates will continue to be “reflective and analytical about their own professional practice” (Clark & Rust, 2006, p. 79).

In a second article exploring performance assessment of students, Niemi, Baker, and Sylvester (2007), provide a project summary and findings from the implementation and evaluation of a model-based approach of student learning via performance assessments by University of California at Los Angeles researchers and the Los Angeles Public School District. Findings reveal that performance assignments using rubrics that are rigorously designed and that are tested valid and reliable provide a better measure of student performance than do standardized tests. Additionally, this study can be used as foundation for building a large scale assessment, increase teacher capacity in understanding of assessment driven learning evaluation, and offer a foundation for future professional development planning (Niemi et al., 2007).

In a study of principals, Sun, Youngs, Yang, Chu, and Zhao (2012) relate that high school principals have a responsibility “for initiating reforms and enhancing student achievement” (p. 190). This study explored Michigan (n=88) and Beijing (n=90) principals regarding how they are routinely evaluated for performance and how that impacts their leadership practices. The authors

used an instrument they created to measure these variables. Findings reveal Beijing principals were more likely to engage in teaching activities i.e. interacting with students, observing classrooms, and offering feedback to teachers, and preparing and delivering model teaching demonstrations for teachers as these indices were integral in principal teaching evaluations and merit pay increases. The findings were different for Michigan principals. Both groups “acted similarly in regards to instructional leadership in supporting teaching and learning (such as setting goals, distributing test results, and providing incentives to teachers” (Sun, et al., 2012, p. 209). What essentially drives leadership-centered activities is the perceived focus of the principal evaluation method (Sun et al., 2012).

In a second study of High school principals, DuFour (2002) discusses his move to become a learning-centered principal. He voices his initially view of the principal role as supervisor of instruction. He refers to this as the “instructional leader” (DuFour, 2002, p. 12) role as denoted by several administrative oversight bodies. He initially focused on what the teacher is teaching and what he could suggest to improve their effectiveness. He now focuses on what extent the students meet their intended course learning outcomes and support measures to aid students and faculty towards improving learning. The balance of the paper discusses strategies employed to facilitate a collective approach to meet these objectives.

Lastly, Mohanty et al. (2005) evaluated the relationship of a LC approach to teaching evaluation compared to results from the standard, oft considered “subjective” (p. 142) cafeteria style, end of course, student evaluations of faculty teaching. The research focused on developing a LC approach in teaching evaluation which included using pre- and post-test evaluation of knowledge and application of course content to add more reliable formative and summative evaluative information to help faculty make changes to improve teaching. Additionally, this

process should provide reliable and valid data for faculty performance for tenure and promotion purposes (Mohanty et al., 2005). The learning-centered approach in student performance was found to be an effective means of appraisal supported by reliable and valid data on performance gains (Mohanty et al., 2005). The authors argue that these findings demonstrate an effective means of teaching assessment compared to the traditional subjective method of student evaluation of teaching (Mohanty et al., 2005).

In summary, performance assessments of students which occur at multiple points during assignment preparation can help students achieve learning outcomes and increase connection with faculty (Clark & Rust, 2006). Performance assignments using rubrics that are rigorously designed and that are tested valid and reliable provide a better measure of student performance than do standardized tests (Niemi et al., 2007). Evaluation criteria tend to drive leadership activities principals employ (DuFour, 2002; Sun et al., 2012). Schools shifting to LC practices need to explore how administrators and faculty are evaluated and make changes to support LC practices since individuals tend to attempt to fulfill their job requirements. Lastly, use of pre- and post-test evaluation of knowledge and application of course content as a form of formative and summative evaluative is a reliable form of information to help faculty make changes to improve teaching (Mohanty et al., 2005).

Literature on Learning-Centered Pedagogies

In the opening chapter of his book on LC teaching, Terry Doyle (2011) remarks “[t]he one who does the work does the learning” (p. 7). He continues by relating that LC teaching is about “optimizing the opportunities for our students to learn. This means figuring out the best possible ways to get them to do the work” (Doyle, 2011, p. 7). As educators design courses, decisions have to be made regarding a multitude of issues including establishing course goals,

planning assessment and evaluation measures, and deciding on which learning activities may best help student's progress towards course and program outcomes.

LC pedagogies come in many forms. O'Neill and McMahon (2005) offer a list of pedagogies to employ outside and inside the face-to-face classroom. Strategies to employ outside of the classroom may include autonomous projects, discussion groups, mentoring of peers, debating, field adventures, practical exams, reflective memoirs, learning logs, computer guided discovery, authoring a news piece, and developing a portfolio (O'Neill & McMahon, 2005). Strategies to employ inside of the classroom may include encouraging brief discussions in small groups, sharing findings between small groups, shifting group memberships by relocating individuals to differing groups, asking questions in class, giving examinations, allowing periods to write reflectively, having students present in varying forms such as in speeches or with posters, and having students mind map ideas (O'Neill & McMahon, 2005). Wu (as cited in Chiang, Chapman, & Elder, 2010) relates that having knowledge of the differing pedagogies is essential if one seeks to optimize student learning.

Looking to the literature over the past decade regarding LC pedagogies can help develop an individual's knowledge of LC pedagogies. In the literature over the past decade, there is one text devoted to LC teaching (Doyle's (2011) and 12 articles on differing pedagogies including self-paced modules (Jeffries, Rew, & Cramer, 2002), electronic portfolios (Hewett, 2004), linked writing assignments (Harvard-Hinchberger, 2006), remote access with case study (Albon, Cancilla, & Hubball, 2006), anchored math problems (Bottge, Rueda, Serlin, Ya-Hui, & Kwon, 2007), deliberative discussion (Goodin & Stein, 2008), evidence review (Ireland, 2008), critical thinking component (Vogel, Geelhoed, Grice, & Murphy, 2009), human interest case study (Huse, 2010), the course council (Heise & Himes, 2010), concept mapping (Passmore, Owen, &

Prabakaran, 2011) and problem based learning (Pucha & Utschig, 2012). Lastly, there is one article exploring why teachers choose the teaching strategies they do (Samuelowicz & Bain, 2002).

In his book, *Learner-Centered Teaching: Putting the Research on Learning into Practice*, Doyle (2011) has designed a helpful text to guide teachers through the research and practical implications toward shifting from current TC teaching practices to LC teaching practices. By creating assignments that are “authentic, meaningful, and useful” (p. 9), students tend to increase attention and become more actively engaged (Doyle, 2011). Doyle (2011) begins with a review of literature on brain related science regarding learning. Tapping into reward centers of the brain through stimulation of select neurotransmitters affecting select brain regions increases an individual’s sense of enjoyment in a process. Understanding this can assist our transition towards using engaging strategies for getting students to do the work. If students feel they are engaging in something that is meaningful and that has direct bearing on future goals and practice, something that is authentic, they respond positively and actively do the work. Doyle (2011) spends the middle part of the book discussing specific actions teachers can use to involve students. These include facilitating learning rather than lecturing at students, actively getting to know students, sharing class responsibility and giving choices to students regarding assignments, class rules, etc., facilitating class discussions, using multiple teaching strategies to engage various learning strengths, revealing patterns experts use to solve issues, and discussing why repetition and elaboration are important. Doyle (2011) ends his book introducing research on the importance exercise plays on learning. Faculty should find this a useful text with helpful suggestions towards becoming a LC teacher.

Self-Paced Modules

Jeffries, Rew, and Cramer (2002) evaluated student satisfaction, self-efficacy, and self-reliance during a comparison of surgical asepsis modules including a self-paced, interactive, student-centered module and a traditional, lecture and demonstration module in a basic skills in nursing laboratory course. The student-centered self-paced module was based on Chickering and Gamson's principles of best practices in education (Jeffries et al., 2002). Sophomore (n=70 and junior (n=50) Bachelor of Science in Nursing (BSN) students were compared. Study authors relate that although reliability measures for self-efficacy and self-reliance were low, mean scores were higher for the student-centered group. Satisfaction results were statistically significant for the student-centered group reporting more satisfaction than the traditional course students. Both groups had post-test cognitive gains indicating that methods were at least equal as far as a cognitive measure of gains (Jeffries et al, 2002).

Electronic Portfolios

In the article, *Electronic Portfolios: Improving Instructional Practices*, Hewett (2004) discusses the benefits of using electronic portfolios as a learning-centered practice to improve student learning. Three types of portfolios are identified including documentation, process, and showcase portfolios. Each of these portfolios serves a specific purpose. Hewitt (2004) relates that e-portfolios can “enhance the knowledge level in the use of technology, promote reflection [,] and develop a communication strategy for teacher candidates” (p. 27). The authors used a Likert-scale like format survey over a three semester period to ascertain class ratings from students. Class ratings improved with use of the e-portfolio. Qualitative comments were positive regarding use of e-portfolios (Hewett, 2004).

Linked Writing Assignments

In the article, *Using Innovative Strategies to Enhance Health Promotion Critical Literacy*, Harvard-Hinchberger (2006) presents a series of linked, writing assessments targeted at improving graduate student writing prowess. This project was part of a university initiative on improving student writing. The author discusses a current problem with advanced practice nursing students not being adept at writing to express knowledge and understanding of ideas. The authors sought to enhance student motivation by having the students read and write a one sentence summary on an article about innovative projects students had developed for health promotion. Next students engaged in a write, revise, rewrite strategy to develop reflective ability and improve writing skills. The students were asked to develop a 250 word proposal as an assignment. The author reports linking these writing approaches proved successful in enhancing student writing (Harvard-Hinchberger, 2006).

Remote Access with Case Study

In their article, Albon, Cancilla, and Hubball (2006) present a pilot project seeking to improve student learning using remote access to scientific instrumentation. Treatments included case studies enhanced by remote access to scientific instruments during lecture sessions to add real-time access with instruments. Use of this method was evaluated with a survey, participant faculty interviews, instructor's reflective journals, and comparison of final examination scores from before and after the intervention (Albon et al., 2006). The case study was felt to have positively enhanced learning although there was no change in exam scores comparisons. Remote access to instruments was felt to be useful by faculty, but less so by students. Problems with video quality were identified as problematic. Faculty felt the interaction and energy levels of the class were enhanced and created a positive environment for learning (Albon et al., 2006).

Anchored Math Problems

Bottge, Rueda, Serlin, Ya-Hui, and Kwon (2007) applied a pedagogical method entitled Enhanced Anchored Instruction (EAI) to a group of middle school students to evaluate learning improvement. Briefly, this method includes anchoring information in “story contexts, visual representations, and multimedia applications” (Bottge et al., 2007, p. 44) in addition to engaging students in collaborative learning networks. EAI is based on cognitive load theory. This theory suggests that “learners have limited working memory and that learning tasks should be structured in ways that do not overload it” (Bottge et al., 2007, p. 46). A tenant of this method is that “[h]igh interactivity materials cannot be fully understood until all elements are processed simultaneously” (Bottge et al., 2007, p. 46) Study participants were middle school students (n=128). A subset of participants had diagnosed as having a learning disability (LD). Results found that with anchoring of materials and having students engage material in groups, students with LD learned at similar levels as non-LD students. Implications for this study include decreasing the need for inclusion classes for LD students by educating teachers on use of EAI methods and developing curriculum for diverse groups of students (Bottge et al., 2007).

Deliberative Discussion

Goodin and Stein (2008) offer an essay on the use of deliberative discussion. Deliberative discussion is a method to engage individuals in purposeful, significant discourse of a topic. Goodin and Stein (2008) offer a list of questions to for a moderator to use to lead a discussion. The authors note that the goal is not to settle on one answer, but to “identify commonalities within the issue and collectively decide what action the group could take” (Goodin & Stein, 2008, p. 273). The concluding result is for “reflection and discovering a shared sense of purpose and accomplishment” (p. 273). The authors offer that this method may “help foster critical

thinking” (p. 274), and help students “move beyond the discussion phase to an action phase” (p. 274).

Evidence Review

The reflective process in teaching is a learning-centered approach to develop a students’ abilities of responding to “change and uncertainty” (p. 92) often encountered in practice. In the article, *Assisting Students to use EVIDENCE as a Part of Reflection on Practice*, Ireland (2008) presents a framework for integrating the practice of reflection across a baccalaureate nursing program. In Table 1 she presents a “blueprint for building competency” (p. 92) which outlines competencies for a four semester nursing program sequence. In Table 2 Ireland (2008) presents various assignments for integrating use of evidence as part of reflection in practice.

Critical Thinking Component

Vogel, Geelhoed, Grice, and Murphy (2009) compared a physical therapy (PT) program and an occupational therapy (OT) program to ascertain whether being taught critical thinking as a curricular component improved performance on a critical thinking appraisal inventory. Students in PT (n=37) and OT (n=13) programs were compared. The inventory was administered before beginning the program and at the end. Although programs were different according to content both programs employed similar learning-centered pedagogies. One notable difference was that the occupational therapy program offered a dedicated critical thinking component. Significant results were noted in the occupational therapy students scoring higher on the critical thinking appraisal inventory at the end of the program. Teaching critical thinking is supported by this study and is beneficial for students to develop these skills (Vogel et al. 2009).

Human Interest Case Study

Huse (2010) presents an empirical study on the use of a human interest case study as an example of a learning-centered method of teaching and learning. Nursing students (n=49) were to engage a case-study regarding Michael J. Fox's experiences with Parkinson's disease. Students were evaluated with an online survey regarding their perceptions of using a celebrity case as an assignment and their performance on unit and final exam questions regarding Parkinson's disease. Students' survey results were that celebrity cases were interesting, innovative and motivating towards learning content. Students achieved greater than 85 % accuracy on Parkinson's disease content on both unit and final exams (Huse, 2010).

The Course Council

Heise and Himes (2010) report on a strategy to promote student-centered learning in a nursing course. The course council strategy entails one student from each clinical section meeting monthly with course faculty to discuss issues, ask questions and give opinions regarding the course. The purpose of the strategy is to provide an avenue for communication that is in a less threatening, small-group environment. Goals are to increase student ownership of course development, affect meaningful change in course structure, promote leadership, and develop higher thinking skills in students (Heise & Himes, 2010). Benefits include faculty developing understanding of students concerns, students' acquiring lifelong learning skills, Students' enhancing professional abilities, and both groups developing an enhanced sense of community (Heise & Himes, 2010).

Concept Mapping

Passmore, Owen, and Prabakaran (2011) studied use of a metacognitive strategy, concept-mapping, on students learning in a baccalaureate distance learning course.. The control

group (n=6) completed the traditional homework problem assignment and questions and answer sessions. The intervention group (n=19) added concept-mapping to the traditional homework problem assignment and questions and answer sessions. Mean scores revealed the intervention group scoring higher on the final exam than did the control group, 72.3 % compared to 57 % respectively. Mann-Whitney *U* test indicated significant difference in median scores. The authors conclude concept-mapping is an effective strategy to help students learn (Passmore et al., 2011).

Problem Based Learning

Pucha and Utschig (2012) undertook a study using a problem based learning (PBL) approach in a freshman course on engineering graphics. The authors use PBL as a learning-centered approach to teaching with the objective of transferring the responsibility in the learning to the student and improving student engagement (Pucha & Utschig, 2012). Structuring learning design using Kolb's model of cyclical learning, the authors engaged the study group (n=5) with a case study on the spaceship Challenger's O-ring problem and the remaining participants (n=34) given a real world industry problem. Pre and post-test surveys comparison of attitudes on the course did not show statistically significant differences. The authors report there are subtle differences noted in the study group regarding improvement of learning attitudes per the pre and post-test surveys. Pucha and Utschig (2012) also compared the grades on exams and the final project of the two groups. They noted enhanced engagement as evidenced by student performance in collaborative groups as evidenced from checklists on collaboration completed by teaching assistants and on the graded items, tests and final project. The authors report the problem-based and case-based approaches appear to enhance learning and result in an enjoyable teaching and learning experience.

Pedagogical Choices

How individuals teach is often aligned with personal philosophy regarding the purpose of education. In *Identifying Academics' Orientations to Assessment Practice*, Samuelowicz and Bain (2002) explored faculty conceptions of assessment practices to better understand beliefs underlying assessment practice choices. Study authors employed a grounded categorization method to “probe for characteristic perspectives and practices, not for variation and conceptions [and] to seek global overall positions, not local variations” (Samuelowicz & Bain, 2002, p. 176). The findings reveal faculty that can be categorized as teacher-centered tend to use assignments where students replicate bits of knowledge, reproduce structured knowledge, adapt structured knowledge, and organize subject knowledge (Samuelowicz & Bain, 2002). In other words, these individuals idea of learning is students knowing a multitude of facts. Faculty that can be categorized as learning-centered tend to use assignments that adapt structured knowledge, transform discipline knowledge, and transform conceptions of the discipline/world (Samuelowicz & Bain, 2002). LC teachers want students to develop knowledge through creation-type projects (Samuelowicz & Bain, 2002).

In summary, pedagogies which cause students to have to engage in authentic and meaningful experiences offer the best opportunities towards developing abilities necessary to function in their chosen fields of practice. Using multiple pedagogies allows the engagement of various learning strengths and development of differing problem solving strategies (Doyle, 2011). Several examples of pedagogies which encourage student engagement and reasoning are noted in the literature in the past decade. Faculty tendency to use specific pedagogies is usually tied to philosophical beliefs regarding how individuals learn. In the section on faculty

development and how to help teachers transition to the LC paradigm strategies a discussion of literature to assist this shift will be explored.

Literature on Learning-Centered Institutions

Architectural design of learning environments and administrative structures are receiving attention due to emerging needs of students, faculty, administrators, and local communities. Evaluation findings are proving traditional classrooms, library spaces, and campus layouts inadequate to support the needs of institutions adopting LC practices of instruction. In the literature on LC institutions one book and one article discuss how striving to develop intentional cultures can develop learning institutions that are learning-centered and enhance institutional effectiveness (Kuh, Kinzie, Schuh, & Whitt, 2005; Cullen & Harris, 2008). One study assesses factors inhibiting and enhancing transition to a LC campus (Brackin, 2012). One essay offers some contingencies to be aware of when partnering with corporate sponsors (Spangler, 2002). Two book chapters present ideas on administrative structures that can support a LC campus (Dale & Drake, 2005; Kisker, 2005). Another essay discusses an intentional change of one community college to become a LC institution (Johnson, 2007). Two articles discuss design of library spaces to accommodate the learning paradigm (Bennett, 2009; Somerville & Brown (2011). Lastly, one article presents the benefits and opportunities in academic communities attaching themselves to retirement communities (Harrison & Tsao, 2006).

Of the two documents on developing culture, Kuh, Kinzie, Schuh, and Whitt (2005) offer a compelling framework of examination to assist institutions through the process of evaluation and change to enhance overall institutional effectiveness. The authors contend their research has identified the commonalities among institutions which make them effective. These institutions tend to focus on student success through engagement practices e.g. “amount of time and effort

students put into their studies and other activities [and] the ways an institution allocates its human and other resources and organizes learning opportunities and services” (Kuh, et al., 2005, p. 4). Graduates of these institutions are sound academically and motivated. Kuh et al, (2005) relate findings from their study of 20 institutions having strong records of student success entitled the Documenting Effective Educational Practice (DEEP) project is the basis for their framework, the Inventory for Student Engagement and Success (ISES). The balance of the text offers examples from institutions in the DEEP study and suggestions on how to institute ISES for institutional assessment and improvement.

A second article on culture evaluated the impact of physical spaces on changing culture. Cullen and Harris (2008) discuss the changes which have taken place over the past two decades at Ferris State University. The authors present the changes undertaken by the faculty and administration to create a learning-centered environment. Stage one involved an assessment of classroom spaces. Stage two involved renovation of classrooms. Stage three involved professional development efforts to better prepare faculty to become learning-centered in teaching. Stage four involved redesign of the faculty resource center and adjacent learning spaces to support learning-centered efforts. The authors relate that assessment is a way to empower communities by involving them in the process.

In a study assessing the factors inhibiting or enhancing transition to a LC campus, Brackin (2012) performed a qualitative evaluation of faculty (n=6) and college administrators (n=4) at a community college to ascertain individual’s experiences regarding success or failure of the institution to become a learning-centered college. Results include both samples reporting that there was clear direction provided for the move to become a learning-centered institution, but faculty remained somewhat hesitant that the traditional classroom experience might be lost.

Second, both samples reported perceiving commitment to the process, but faculty felt they had little say or participation in the process and that it felt “top / down” (Brackin, 2012, p. 184).

Third, both samples reported that a learning-centered college allows for a broader perspective of issues, but respondents also stated that not everyone’s point of view was always considered, collaborative learning opportunities were not consciously offered, and out of class learning opportunities were not always relevant. Fourth, the roles of teachers and administrators seemed to change, but “18 % indicated that students were not partners in the learning process in their classroom, 21% felt that not every employee at the college serves as a facilitator of learning and 19% did not think college did a very good job of connecting what students learn to real world application” (Brackin, 2012, p. 184). Fifth, a majority of respondents reported that learning outcomes are being achieved. Sixth, a majority of individuals agreed that institutional processes improved when transitioning to a learning-centered college. Seventh, all respondents reported the transition to learning-centeredness promoted higher level learning. Eighth, there was some disagreement regarding whether frequent assessment was instituted to document learning. Ninth, there was some agreement that faculty were allowed to conduct classes as they saw fit, but administration essentially led the attempt to become a learning-centered campus. The tenth category assessed faculty sharing of responsibilities with students. Roughly two-thirds of faculty felt they allowed students some choice. Factors that facilitated to the college becoming a learning-centered one included the college putting student learning as the first priority, the motivational atmosphere that emerged, and a recent shift to adopting more technology which aided transition. Factors that prohibited the college becoming learning-centered include lack of resources and time, difficulty in sustaining motivation levels, change not being easy, lack of mentors, and many individuals lacking a technology skillset (Brackin, 2012).

There are additional contingencies one needs to be aware of in the transition to a LC campus when considering partnering with corporate sponsors. In his chapter on successful partnerships, Spangler (2002) summarizes some of the reasons community colleges are successful in connecting with corporate partners is because there is economic benefit to the school and business and leadership is involved in the process, and when students can benefit directly from the alliance. In the latter portion of the chapter, Spangler (2002) expresses some of the challenges to partnerships. These include identifying each partner's needs and partnership expectations, realizing that there are rules and regulations when dealing with a governmental agency such as a community college, having to consider potential alternative ways of course delivery and current faculty abilities to carry them out, recognizing there may be differing college and partner missions and styles of management, and how governance of the program will be controlled.

Two book chapters explore administrative structures that can support a LC campus. First, Dale and Drake (2005) consider connecting academic and student affairs divisions through partnerships to enhance student success. Creating a culture where differing units collaborate can unify the purpose of the institution as a whole (Dale & Drake, 2005). No longer would the units work as silos separated from each other. In this chapter, the authors offer six steps towards integration of the academic and student affairs units including defining partnerships as a central tenant, ensure programming leads to collaborative efforts between student and academic affairs, “[g]round partnerships in real institutional problems and opportunities” (p. 56), “[l]everage the assessment movement” (p. 56) to measure effect of student affairs on student learning outcomes, “[m]odify organizational structures to facilitate collaboration” (p. 57), and realign budgets to support continued interaction between the units (Dale & Drake, 2005). Areas where these two

divisions may collaborate include first year experience programs, early intervention programs, learning communities, service learning programs, distance-education programs, academic advising, academic bridge programs, and conflict management services (Dale & Drake, 2005). Finally the authors discuss how technology may assist the partnership by linking the student affairs services with academic needs. Examples include “assess[ing] learning styles, interest inventories, academic skills assessment for course placement, and assessing learning outcomes for courses” (Dale & Drake, 2005, p. 61). Dale and Drake (2005) conclude that coupling the talents of both units should strengthen the process for student success.

In a second book chapter, Kisker (2005) presents a brief literature review regarding resources available for the student affairs professional in the areas of “expanding focus on student learning, applying student development theory to practice, and assessing student affairs programs and services” (p. 90). The author also identifies websites and professional organizations for additional advice.

In the essay, *Wallace State’s New Rules of Business: Affirming the Truths of Intentional Transformation*, Johnson (2007) discusses the process of a community college’s adopting and shifting to a framework of intentional transformation. The goal was to improve student engagement by adopting a learning-centered planning model, increase faculty involvement in initiatives by adopting a shared governance model, and create a fiscally responsible business by focusing initiatives on student learning outcomes. To this end, three centers were developed including a student support center, a faculty support center, and a center to address needs of under-prepared students. No data regarding success or failure of the initiative is offered.

Regarding the two articles on design of library spaces to accommodate the learning paradigm, one discusses the history of educational paradigms influencing design and one article

discusses planning efforts to create a LC library. In Bennett's (2009) article, he traces three paradigms influencing library space design including the reader-centered, book-centered and learning-centered paradigms. In the case of the reader-centered design paradigm, libraries were constructed around the idea that space was needed for the individual who was reader.

Architecture reflected the need to allocate spaces for reading. The book-centered design paradigm influenced the design of spaces that shelved large collections of texts. "Book space, not reader space" dominated this architectural mindset. Finally, the learning-centered design paradigm, Bennett (2009) relates, ended with the arrival of information technology and the ability to house articles and texts in virtual environments. The need for shelving abruptly ended. This paradigm shifts control to learners to take responsibility over space and control of personal learning. This paradigm fosters a culture of intentional learning. When individuals want to know something they navigate the virtual landscape to find the information. Lastly, the learning-centered design paradigm actively supports collaboration. To this end, the development of spaces in the form of group study rooms and common spaces have driven architectural design.

In the article, *Library Space Planning: A Participatory Action Research Approach*, Somerville and Brown (2011) discuss the planning and research efforts one college undertook to create a learning-centered library. Authors considered two questions. First, what should a library's physical space and resources look like? Second, how could the campus members be involved in planning so as to best represent their needs? Somerville and Brown-Sica (2011) chose participatory action research (PAR) as the methodology to guide the study as they understand it as a group of steps that engage people to actively create and work with one another to address pressing needs. The project took place over an 18-month period. The study resulted in a redesign of library space. Use of the PAR methodology was believed to address contemporary

student learning behaviors and the faulty teaching pedagogies to support those behaviors (Somerville & Brown-Sica, 2011).

Lastly, Harrison and Tsao (2006) explore the current literature on expanding the traditional academic community to envision the benefits and opportunities of attaching themselves to retirement communities. The goal is to blur the boundaries of academic and business categorizations and create cultures that sustain mature adults on campus, reinforce commitment to the community at large, and maintain an institution that is committed to diversity. The authors present a case example of the University Retirement Community in Davis, California as an exemplar. Harrison and Tsao (2006) conclude these communities would enforce a solid vision of a learning-centered community focused on new types of learning environments linking the university to the local community and the wider social context of lifelong learning.

In summary, intentional changes to create a culture that is LC can be accomplished and can make a meaningful difference in the learning experience (Kuh, et al., 2005; Cullen & Harris, 2008). Factors such as situating student learning as a priority, creating a motivational atmosphere, and adopting more technology to aid transition can facilitate a college's move to a LC one. Factors such as limited resources and time, difficulty in sustaining motivation levels, change not being easy, lacking mentors, and individuals lacking a technology skillset can prohibit a college from transitioning to becoming a LC one (Brackin, 2012). Relationships between colleges and corporate sponsors can be successful and enhance students' success if both entities pay attention to each other's needs and ways of functioning (Spangler, 2002). Moving to become a LC campus will require existing departments to collaborate and possibly redesign existing centers to support student and faculty needs (Dale & Drake, 2005; Kisker, 2005; Johnson, 2007). Learning environments can and need to be architecturally designed to support

LC needs (Bennett, 2009; Somerville & Brown (2011). Lastly, linking the university to retirement communities can offer a beneficial option for universities seeking to enhance lifelong learning options for individuals (Harrison & Tsao, 2006).

Literature on Problems Encountered with Learning-Centered Approaches

Adopting a LC approach to teaching and learning has not proven to be an easy transition for many. Problems can and do arise. Being aware of the literature on this subject may be beneficial for individuals and organizations transitioning towards the goal of becoming LC. Students (O'Neill & McMahon, 2005; Wohlfarth et al., 2008) and teachers (O'Neill & McMahon, 2005) often relate concerns regarding moving to a LC approach to teaching. A second issue is the pace of change LC practices may require (Bellack, 2005). A third issue is involves the complex nature surrounding grading in LC classes (Farias, Farias & Fairfield, 2010; Mostrum & Blumberg, 2012). A fourth issue relates to the difficult nature of change (Jordan-Fleming, Klabunde, & Zane, 2005). A fifth issue involves resistance to collaboration (Koester, Hellenbrand, & Piper (2005). A final issue is addressed by Shugart (2002) who addresses the business model which is present in higher education which creates the student as customer and that effect this causes on the students drive to learn.

Students and teachers often struggle with LC environments. Wohlfarth et al. (2008) studied student perspectives after experiencing a learner centered designed course. Twenty-one students enrolled in either an introductory counseling course or a child psychopathology course. Both courses were developed according to Maryellen Weimer's five principles of learner-centered teaching. Study results were mostly positive in regards to all five principles. Some students reported being frustrated from not having the skills to interact in a learner-centered setting. Other students wanted the professor to "retain more control of the classroom experience

itself so that critical concepts did not get lost” (Wohlfarth et al., 2008, p. 73). The authors suggest that balance may be found when the professor retains relatively more power in controlling the learning experiences, discussions, and small group work of students” (Wohlfarth et al., 2008, p. 73).

In their chapter on what student-centered learning means for teachers and students, O’Neill and McMahon (2005) explore definitions of student-centered learning, how teaching and assessment practices can be organized in relation to the aims of student-centered learning, and suggest potential issues critical for its approach. O’Neill and McMahon (2005) summarize the definition of student-centered learning as entailing three precepts: (1) The student has a “choice in their education” (p. 29) or what they want to learn, (2) The student is “doing more than the lecturer (active versus passive learning)” (p. 29), and (3) There is a “shift in the power relationship between the student and the teacher” (p. 29) with the student assuming more control over their learning. O’Neill and McMahon (2005) organize student-centered learning and teacher-centered learning on more of a “continuum...depending on the contextual barriers of the teaching situation” (p. 29). O’Neill and McMahon (2005) relate several implementation strategies including “the idea of students having a choice in what to study [and] how to study” (p. 29). Examples include employing “modules” (p. 29) which allow students to learn at their own pace, “[p]roblem-based learning” (p. 30) cases where students engage authentic discipline issues, and co-authoring “learning objectives/outcomes” (p. 30) giving students more ownership and responsibility in learning. A detailed list of learning strategies for the classroom is presented in Table 3 (O’Neill & McMahon, 2005 p. 31).

O’Neill and McMahon (2005) review various difficulties in assessment. They cite Foucault regarding the idea that examination is a technique of power. This seemingly troubles

the idea of how power is shifted to the student in this learning model. The need is to use more formative assessment to help students identify “learning gaps” (O’Neill & McMahon, 2005, p. 31). Table 4 and Table 5 present examples of student-centered assessments and the assessment process, respectively. The author’s third and fourth points deal with effectiveness of student-centered learning and critiques of student-centered learning. The authors relate that “student-centered learning appears to be reflective of today’s society where choice and democracy are important concepts” (O’Neill & McMahon, 2005, p. 33). Citing studies by Lea et al. (2003), Lonka and Ahola (1995), and Hall and Saunders (1997), students reportedly favor the student-centered learning approach due to its effectiveness in helping them learn, its help in developing study strategies and understanding, and its boosting their confidence, respectively.

One of the central critiques O’Neill and McMahon (2005) relate is that student-centered learning solely focuses on the individual learner. If taken to the “extreme [it] does not account for the needs of the whole class” (O’Neill & McMahon, 2005, p.33). Citing Bredo (1999), the authors relate that there also appears to be a lack of social context of learning. The authors relate it is not that student-centered learning devalues interaction, it just “does not emphasize the importance of peers” (p. 33) in the learning context. Student-centered learning is also criticized as being a “Western approach” (p. 33) that does not easily transfer to other regions of the world. Another critique deals with a student’s personal belief regarding how education should occur. Students feeling that a teacher-focused approach is best, such as the lecture only format, may regard student-centered approaches with disdain. The last critique the authors discuss is the “students’ [lacking] familiarity with the term” (p. 34).

A second issue is related to the ability of how current organizations i.e. clinical partners, are able to adapt to the needs driven by LC practice. In her editorial, *Teaching for Learning and*

Improvement, Bellack (2005) relates that the current problems in nursing education related to rapidly evolving evidence-based findings and faculty needing to quickly adapt to these changes would be best served through the use of rapid cycle breakthrough innovation models currently used in clinical environments. She relates these models as learner-centered because they actively engage participants in all aspects of teaching including design, testing, and evaluation. Additionally, she advises that clinical partners should be included in this process. This would be beneficial by helping the partners learn how LC practices work.

A third issue involves grading in LC classes. Farias, Farias and Fairfield (2010) discuss how some students and faculty differ in their positioning regarding grading and learning. The authors relate that some students tend to value grades over learning due to the importance often placed on grades. Additionally, faculty often send conflicting messages as well. Many relate a belief in learning-centered approaches where “the balance of power shifts towards the learner, the emphasis is on reflection and deep understanding, and learners take on the responsibility of learning” (Farias, Farias & Fairfield, 2010, p. 336), but maintain practices that hold grades in high regards. The authors developed a matrix to denote compatibility of the differing student and teacher positions. The authors offer that an understanding of the mismatch should help improve learning relationships between students and faculty.

In their article, *Does Learning Centered Teaching Promote Grade Improvement?*, Mostrum and Blumberg (2012) undertake an exploration of the historical rhetoric surrounding the concept of grade inflation and how the introduction of learning-centered teaching troubles a continued use of the term. Grade inflation is essentially defined as the assignment of a higher grade than was actually earned on an assignment or for overall class performance. Multiple reasons are posited for this including the potential lack of rigor in coursework, economic issues

necessitating student retention, and adjunct faculty actions to retain positions. Citing Hassel and Lourey (2005) and Kolevzon (1981) the authors relate that the enduring concern is that the lingering perception of grade inflation threatens “the effectiveness and credibility of higher education and its graduates” (para. 2). Citing Boretz (2004), what seems to be troubling the view of grade inflation is the fact that more faculty are attending programs to enhance their classroom instruction and that institutions have added more student support services. Additionally, improvement in instructional design coupled with authentic assessment techniques may be reflected in improved student learning. Instead of using “good grade inflation” (Mostrum & Blumberg, 2012, para. 5) as a reference to improved student learning, the authors advance and recommend using a new term “grade improvement” (Mostrum & Blumberg, 2012, para. 5). Citing literature on the three tenants of learning-centered teaching, which include shifting the responsibility of learning to the student, engaging the students actively through course material with representative authentic assessments, and providing formative assessments prior to summative evaluations, the authors relate that evidence is present “to support the idea that using these approaches leads to learning increases, which leads to earned grade improvement” (Mostrum & Blumberg, 2012, para. 30).

A fourth problem is the lack of understanding regarding the difficult nature of change. In the article, *Trial, Error, Triumph: A College Rethinks its Core Curriculum*, Jordan-Fleming, Klabunde, and Zane (2005), discuss the re-envisioning of the core curriculum at the College of Mount Saint Joseph in Cincinnati, Ohio after problems occurred with a new curricular focus. Curriculum revision in 1996 led to the adoption of an interdisciplinary focus in core courses. Students struggled adapting to the nature of the courses and retention rates plummeted and faculty frustration increased with rising student complaints. Reflection on the part of student,

faculty, and administration revealed an instructor-centered approach and not a learning-centered approach was used in the development of the core curriculum. Identified were no measurable outcomes for students, only a list of purposes faculty hoped to achieve. All stakeholders worked to identify a list of baccalaureate outcomes and assessment measures for them. These efforts resulted in the emergence of learning and assessment communities among faculty, a need for transparency and faculty participation during all aspects of curriculum revision, and that “the foundation for the learning-centered paradigm is and understanding of student learning and development” (Jordan-Fleming et al.2005, p. 26).

A fifth issue is in regards to challenges encountered when collaboration is used. Koester, Hellenbrand, and Piper (2005) present a set of institutional challenges to the university’s shift to a learning-centered campus. These include needing a clear and unifying vision for the campus, increasing collaborative partnerships across university divisions, basing decisions on evidentiary findings, transforming culture among stakeholders, realizing challenges will continue to arise such as budget shortfalls and system-wide mandates (Koester et al., 2005).

A final issue which arose is a philosophical one regarding reconciling passion for learning and purchase power. In *Love of Learning*, Shugart (2002) ponders how the current view of the student as customer seems to be at odds with the learning-centered colleges attempting to address the concern of “student lack of passion for learning” (p. 345). In this essay, Shugart (2002) relates that the real issue seems to be whether we can value what we can readily buy. If so, then can we be passionate about something we can easily purchase? To this end, Shugart (2002) asks, should we add love of learning as a learning goal in a learning-centered college?

In summary, problems do exist with use of LCT. Evaluating all areas of the curriculum can reveal areas where one can make changes to improve the learning processes. The literature

on this topic reveals several issues. First, student unfamiliarity with LC methods may lead to frustration due to the lack of skills to participate in LC settings and due to student thinking that faculty are less engaged (Wohlfarth et al., 2008). Students want the professor to maintain more control the learning activities and methods (Wohlfarth et al., 2008), but seem to be misunderstanding the LC paradigm process of shifting the responsibility of learning to the student. Second, clinical partners seem to have been left out of the design, testing, and evaluation processes. Clinical partners need to be encouraged to participate in all aspects of the process so they may develop understanding of LC methods (Bellack, 2005). Third, grades have traditionally been positioned as the end-all measure of academic progress. There seems to be a mismatch with the way grades traditionally denote success and the way student and faculty actualize progress in the LC paradigm (Farias, Farias & Fairfield, 2010). Discussion needs to occur regarding how learning may be symbolized in the LC paradigm. One solution offered is to use the term “grade improvement” (Mostrum & Blumberg, 2012, para. 30) instead of grade inflation when discussing student performance. Next, Jordan-Fleming et al., (2005) identified that many times faculty are left out of the decision process. Faculty participation during all aspects of curriculum revision is necessary for LC methods to be understood and accepted (Jordan-Fleming et al., 2005). Also, preparing students to participate in LC methods is necessary if students are to be successful in LC programs. Lastly, Shugart (2002) relates that there may be disconnect in the way education is viewed in the 21st century when she asks whether one can value what one can readily buy. To this end, Shugart (2002) poses the idea of adding love of learning as a learning goal as a way to foster this aspect of learning-centeredness.

Literature on Faculty Enhancement: How to Help

Making the shift to become a LC teacher can be a difficult task for faculty. Literature exploring faculty experiences on becoming a LC teacher and other enhancement possibilities can offer much needed assistance for these individuals. Literature on faculty enhancement regarding LC environments is limited, but what is available can be grouped into five broad areas: (1) Understanding faculty experiences in LC environments; (2) Understanding student experiences in LC environments; (3) Creating LC courses; (4) Utilizing peer support, and (5) Developing curriculum.

Understanding Faculty Experiences

Of the literature regarding faculty experiences in LC environments, three articles discuss how teachers view implementation of LC environments (Colley, 2012; Diekelmann & Lampe, 2004; Pedersen & Liu, 2003), one article explores LC characteristics of nurse educators (Greer, Pokorny, Clay, Brown, & Steele, 2010), and three articles engage challenges educators face when adopting learner-centered teaching and learning practices (Chiang, Chapman, & Elder, 2010; Dalley, Candela, & Benzel-Lindley, 2008; Kantor, 2009).

The first area of faculty enhancement deals with understanding faculty experiences in LC environments. Colley (2012) investigated faculty perceptions of learner-centeredness. Colley (2012) evaluated faculty perceptions after a school of nursing's adoption of a learner-centered philosophical framework. Qualitative investigation revealed that an understanding of the philosophy, agreement with the philosophy, perception of benefits of learner-centered teaching modalities, support from administration, having access to readily available resources, and having previous knowledge and use of learner-centered practices all increased implementation of learner-centered practices in classrooms.

In a second article on faculty experiences, Diekelmann and Lampe (2004) report on a case study of a nurse educator during her adoption of student-centered approach to teaching. “De-centering herself” (p. 247) from a teacher-centric position in the learning experience and re-joining herself as a collaborator with students in developing learning encounters has dramatically changed her thoughts regarding how people best learn. The authors purport co-creation as an avenue for fashioning compelling courses.

In a third article, Pedersen and Liu (2003) offer their findings from a qualitative research project on applying computer-based learning (CBL) design as a student centered learning approach and to explore teacher’s beliefs regarding this technique. Fifteen middle school teachers participated in the study. Results reveal there is still some confusion regarding the definition of student-centered learning although all had heard about it. As for the teacher’s responsibility, some felt that structuring the learning event was most important, whereas others felt that questioning the student to support higher order thinking was most important. There was consensus among teachers that collaboration was important in that it improved “problem solving through social negotiation and enhanced communication” (Pedersen & Liu, 2003, p. 68). Problems did occur when students paired with others according to differing “ability or motivational levels” (Pedersen & Liu, 2003, p. 68). The higher achieving or more motivated students would complain that they were doing more of the work. A second issue occurring with collaboration was that students may become “frustrated with each other” (Pedersen & Liu, 2003, p. 68). Another issue included grading and motivation. Some teachers felt grading would motivate students, which is contrary to learning research that relates grading actually decreases intrinsic motivation.

Several concerns arose regarding CBL including whether CBL design would hinder development of a student's knowledge base and was rather consuming of class time. Many teachers felt CBL only helped acquire problem solving skills and that less information could be covered than would be in a teacher directed classroom. Although student motivation was felt to be enhanced by several reasons including the "hands-on nature of the program" (Pedersen & Liu, 2003, p. 70) and "having control over [the learning] process" (Pedersen & Liu, 2003, p. 70), teachers interestingly stated that students were more motivated because the program was computer based. The authors found many teachers struggled with CBL learning not being appropriate for individuals with special needs. These students would struggle because they were behind academically and that they did not want control of their learning. Student floundering was thought to be both a problem and benefit. It was felt to be a problem because students took a longer time than usual. It was felt to be beneficial because students have to reflect "why they had difficulties" (Pedersen & Liu, 2003, p. 72) and consider how to correct them. A final belief was voiced in regards to community response. Student-centered approaches were perceived to allow students to be active in doing learning and not just passive participants, but teachers felt individuals in the community may see CBL as play.

Pedersen and Liu (2003) relate that many teachers are resistant to change themselves and suggest avoiding the terms "student-centered learning [or] facilitator" (p. 74) because many teachers often have preconceived definitions for these terms which may have a negatively influence on change. The authors suggest "anchor[ing] the discussion around pedagogy in specific examples of facilitation strategies" (Pedersen & Liu, 2003, p. 74) to help teachers tie theory to practice. A second suggestion is to offer "benefits of collaboration...so that students develop the skills for working with others" (p. 74). Future research ideas offered include the

issue of grading student-centered learning activities, teacher beliefs regarding student motivation, and teacher response to the floundering student.

In the article exploring LC characteristics of nurse educators, Greer, Pokorny, Clay, Brown, and Steele (2010) performed a qualitative study of responses from a 2006 survey of nursing faculty (n = 694) that self-identified using “contemporary pedagogy at least 50% of the time” (p. 2) when teaching. Study authors used Weimer’s 2002 learning centered philosophy of teaching to frame the responses. The emerging learning-centered characteristics identified were sortable under four themes and were consistent with Weimer’s 2002 framework. The themes include the “concepts of power, role of teacher, responsibility of learner, and philosophy of evaluation” (Greer et al., 2010, p. 1). The concept of power was indicative of the teacher valuing students by “empower[ing] them in a partnership that increased self-awareness through shared assessment” (Greer et al., 2010, p. 5). The concept, role of the teacher, was based on teacher “enthusiasm, belief in students, expertise, partnership, adaptability, creativity, and self-perception (Greer et al., 2010, p. 5). The concept, responsibility of learner, was found to have a basis in the teacher’s use of pedagogies that regarded learner insight, encouraged learner interactions, supported partnerships, fostered self-directedness, and encouraged engagement (Greer et al., 2010). The conceptual idea of philosophy of evaluation materialized as several areas of importance including positioning the student as a responsibility party in the evaluation process, using feedback to enhance learning, encouraging collaborative evaluation in learning, and using outcomes from a variety of sources to support course redesign to further support learner-centeredness. Finally, learner-centered inhibitors were identified as well. The inhibitors involved “administrative issues, learner issues, and lack of understanding” (Greer et al., 2010, p. 8).

Next, two articles discuss challenges educators face when adopting learner-centered teaching and learning practices. In the first article, *Learning to Let Go: The Challenge of De-crowding the Curriculum*, Dalley, Candela, and Benzel-Lindley (2008) present a prevailing concern in many nursing programs of too much content to be covered through the curriculum. The authors suggest a shift to learning-centered strategies as a way forward to assist in the de-cluttering of the content with only essential content remaining. In “Table 1” (p. 66), Dalley et al. (2008) offer a five-step process faculty can institute towards de-crowding curriculum. The authors conclude with a discussion of their experiences during curriculum revision as a way to give insight and offer anecdotal suggestions to help the process along.

In the second article, Chiang, Chapman, and Elder (2010) explored challenges of Taiwanese nurse educators adoption of learner-centered teaching and learning practices. Employing an action research methodology, the study explored educator’s experiences during restructuring of a psychiatric nursing curriculum. Key issues were identified including having to come to terms with personal conceptions of teaching and learning, lack of pedagogical knowledge, cultural influences on learning, and the impact of memory on changing behavior. Since many faculty had only ever experienced teacher-centered learning and teaching, their lack of pedagogical experiences influenced their beliefs on how teaching should take place. The authors relate that the current nursing education system in Taiwan, which has a longstanding basis in teacher-centered practices, continues to have profound influence towards challenging learner-centered approaches (Chiang et al., 2010).

Kantor (2009) relates a personal experience shifting from a traditional teacher-centered approach to educating to one focused on a concept-based student-centered approach. By encouraging students to take charge of their learning by concentrating “on concepts, students

[were able to] increase their understanding of health patterns and how to logically and systematically organize information, facilitating critical thinking skills” (Kantor, 2009, p. 415). By doing this, students were able to gain a more holistic understanding of their patient as opposed to the more linear one they achieved in the past.

Understanding Student Experiences

The second area for faculty enhancement details student experiences in LC environments. One article and one abstract reveal students desires in a learning environment (Wohlfarth et al., 2008; Zavod, Zgarrick, & Duong 2006). Having knowledge of this can be beneficial in meeting the needs of students by creating a LC environment.

In the article, *Student Perceptions of Learner-Centered Teaching*, Wohlfarth et al. (2008) noted that students wanted the professor to “retain more control of the classroom experience itself so that critical concepts did not get lost” (Wohlfarth et al., 2008, p. 73). The authors suggest that balance may be found when the professor retains relatively more power in controlling the learning experiences, discussions, and small group work of students” (Wohlfarth et al., 2008, p. 73).

In an abstract on student perceptions, Zavod, Zgarrick, & Duong (2006) evaluated pharmacy students (n=200) regarding their preferences regarding lecture. The students preferred equal amounts of lecture and non-lecture based classes with practice problems and lecture being preferred. Multiple choice and short answer exam questions were preferred as best methods of assessment. The students voiced that they also wanted contact with the instructor outside of the classroom. Zavod et al., 2006) conclude that awareness of student preferences can assist with learning environment design including classroom teaching method choices and other support to best meets the needs of the students.

Creating Learning-Centered Courses

The third area for faculty enhancement is creating LC courses. First, there is one book elucidating changes one can make to one's teaching practice to become learner-centered (Weimer, 2002). Second, there is one article and one book chapter discussing how to create learning outcomes and objectives (Houlder & Collier, 1999; Hubball, Gold, Mighty, & Britnell, 2007). Third, one article discussing using multiple teaching strategies (Miller 2004). Fourth, there is one article exploring how to teach with care (Straits, 2007). Fifth, there is one article on course alignment and how to facilitate learning regarding different types of knowledge (Blumberg, 2009).

Literature on creating a LC courses includes several helpful adjuncts for faculty. First is Mary Ellen Weimer's (2002) text which explores key practices involving learner-centered teaching. In her book, *Learner-Centered Teaching: Five Key Changes to Practice*, Weimer (2002) outlines five changes teachers can make to become learner-centered teachers. These five broad changes include: (1) redistributing the balance of power in classes by requiring students to make more decisions about their learning; (2) shifting the focus of course material away from "the race to cover content" (p. 48) towards assisting students to develop a working knowledge while cultivating broad skills in reasoning; (3) redefining roles of teachers as facilitators and students as investigators of problems; (4) making students more accountable for their own learning which entails creating climates conducive of internal motivation and self-responsibility in learning; and (5) re-characterizing evaluation as an active and rewarding processes in development (Weimer, 2002). Chapters seven through nine address the subjects of resistance from students related to classroom models that are unfamiliar from past experiences, using a developmental approach to gradually change students from being dependent to more independent

and self-directed learners, and using a more systematic i.e. learning design, approach towards implementing learner-centered strategies (Weimer, 2002). Finally, Weimer (2002) offers several appendices of examples of learner-centered strategies and references for further review.

A second component of creating LC courses is creating learning outcomes and objectives. One article and one book chapter discuss how to create learning outcome objectives (Houlder & Collier, 1999; Hubball, Gold, Mighty, & Britnell, 2007). First, Houlden and Collier (1999) offer that as the learner-centered focus in teaching and learning becomes more of a presence in education, the way individual's carryout developing objectives for continuing medical education (CME) events needs attention. In their article, Houlden and Collier (1999) offer several steps to writing objectives through a learner-centered lens. Following a needs assessment to help identify the more important needs of the learners, CME planners should realize that in addition to the traditional focus on medical knowledge and skills, there are other areas individuals need improvement in including "communication, information technology, teamwork, management, and advocacy skills" (Houlder & Collier, 1999, p. 208). Writing objectives for these areas can be enhanced by envision the outcomes one wants learners to obtain. Houlder and Collier (1999) suggest writing objectives at the application and problem solving level for CME courses to help the teacher focus session content. Finally, objectives need to be written using behavioral and non-behavioral components as appropriate. Overall, this essay seems to offer several helpful hints for CME planners regarding developing learning objectives to be measurable.

Finally, In a chapter on *Supporting the Implementation of Externally Generated Learning Outcomes and Learning-Centered Curriculum Development: An Integrated Framework*, Hubball, Gold, Mighty, and Britnell (2007) discuss a system-wide initiative to implement a set of

broad learning outcomes for college undergraduates in one Canadian province and offer “a framework for the development, implementation, and evaluation of program level outcomes” (p. 94) developed from those outcomes. The six general categories of learning outcomes include “depth of knowledge[,] knowledge of methodologies[,] application of knowledge[,] communication skills[,] awareness of limits of knowledge[,] and autonomy of professional capacity” (Hubball, Gold, Mighty, & Britnell, 2007, p. 94). The authors present an action research methodological framework which should be a useful aid to others engaging in curriculum design for systematic evaluation in a learning-centered context.

A third component in creating LC courses is using multiple teaching strategies. Miller (2004) presents a study regarding a redesign of a predominant lecture- and exam-based geriatrics pharmacy elective course to one that employs “multimedia presentations, web-based lectures, nontraditional assessments, and interactive activities” (p. 6). The course was changed due to lack of interest in the course, dull format, slow pace, and not meeting the objective of student development of empathy for geriatric clientele. Students were evaluated using “two validated surveys regarding opinions on aging and geriatrics” and course opinion surveys (p. 2). Results from the surveys include students regarding course changes as helpful for personal development and improvement in understanding of and empathy for geriatric issues.

A fourth component in creating LC courses is learning to teach with care. In *"She's Teaching Me: Teaching with Care in a Large Lecture Course"*, Straits (2007) conducts a grounded theory study using naturalistic inquiry methodology to describe in narrative form a caring instructor's teaching practices and the impact these practices have on student behavior. Based on interview analysis the indicators for caring instruction include being available for students, respecting students, giving extra effort, welcoming questions, inviting discussion in

differing environments, getting to know students, encouraging students to succeed, offering various learning opportunities, employing several pedagogical strategies, offering differing resources to students, and encouraging higher-level reasoning strategies (Straits, 2007). Straits (2007) notes these indicators are indicative of learner-centered and learning-centered teachers. Additionally, the findings “suggest that teacher caring is exemplified by both appealing to the affective and the cognitive and can improve learning by promoting student motivation” (Straits, 2007, p. 174).

The fifth component of creating a LC course deals with learning about course alignment and how to facilitate learning regarding different types of knowledge. In her article, *Maximizing Learning through Course Alignment and Experience with Different Types of Knowledge*, Blumberg (2009) explains how attention to linking objectives with suitable teaching and learning activities along with fitting evaluation exercises, and coordinating these experiences while further addressing the four types of knowledge, i.e. “factual, conceptual, procedural, and metacognitive,” (p. 93) should increase the probability for student learning. Citing Anderson’s et al. 2001 publication, *A Revised Taxonomy for Learning, Teaching, and Assessing*, Blumberg (2009) develops a heuristic to aid course preparation and evaluation. Blumberg (2009) does a nice job of summarizing Anderson’s et al. taxonomy along with the definitions of the four types of knowledge. Examples are given in the context of a physical therapy course which advances understanding of the heuristic’s use.

Utilizing Peer Support

The fourth area for faculty enhancement is utilizing peer support. This entails the benefits of having a support network. In an article on having a mentor, Vitale (2010) discusses the online asynchronous teaching methods and course development strategies for nursing faculty members

who either currently teach or are just beginning to teach in online environments. Vitale (2010) begins with the benefits of having a mentor – preferably an experienced online teacher. These individuals can help junior faculty to develop the skills to develop a community of learners within courses. Vitale (2010) offers tips for developing a course, schemes for engaging students starting with “icebreakers” (p. 552), strategies for keeping students engaged, and approaches to developing and facilitating discussion boards along with other formative and summative assessment ideas. Finally, Vitale (2010) offers a course design outline in Table 2.

Curriculum Development

The fifth area for faculty enhancement is in the area of curriculum development (Cullen, Harris, & Hill, 2012; Hubball & Gold, 2007; Hughes, 2007; Ironside, 2006). In a text, *The Learner-Centered Curriculum: Design and Implementation*, Cullen, Harris, and Hill (2012) present their notions of post-modern curriculum design and implementation in lieu of compelling amounts of research advocating learner-centeredness. Traditional approaches to curricular design are at odds with a post-modern view that “focuses on the learner’s construction of knowledge and the transfer of that knowledge within different contexts” (Cullen et al., 2012, p. 46). The authors relate that an important component of learner-centeredness is the need “to develop creative, autonomous learners who can readily adapt to a rapidly changing society” (Cullen et al., 2012, p. 21). Cullen et al. (2012) offer that although many institutions relate they are learner-centered, they are referring more-so to the use of learner-centered pedagogies by individuals and not broad curricular approaches. In chapter two, the authors challenge five enduring notions of curricular design and implementation. These include that (1) “curriculum needs to be linear because learning is a linear, additive process” (p. 35), (2) “everyone learns in the same way, as receivers of knowledge” (p. 42), (3) “the time it takes to learn something is indicative of

[intellect]” (p. 37), (4) error in thinking is negative, representing decreased intellect, and (5) “knowledge is an entity to be controlled and owned” (p. 38).

Cullen et al. (2012) challenge these aforementioned notions with constructivist ideas of how people learn - which is not a linear process. Discussing Jerome Bruner’s views on learning, it is more fluid and occurs in a spiraling process where concepts are revisited (Cullen et al., 2012). Time restrictions cannot be placed on learning. Error is actually positive from a post-modern view in that “it is an opportunity to learn and expand” (p. 37). Finally, they challenge that disciplines do not own knowledge. Curricula should not be organized “according to discipline and discipline history” (Cullen et al., 2012, p. 38). Individuals should not lose credit when transferring from one discipline to another. To this end, Cullen et al. (2012) outline a framework for developing curriculum infusing a learner-centered format. They advocate using a recursive curricular design based on Doll’s “four criteria for a post-modern curricular design [including] richness, relations recursion, and rigor” (Cullen et al, 2012, p. 47) to achieve a desired effect of learner-centered learning including “community building, power sharing to foster learning autonomy, and ongoing assessment for continuous improvement” (p. 64). Cullen et al. (2012) provide discussion on leading curricular implementation and adopting learner-centered teaching strategies. Additionally assessment strategies need to encourage learner autonomy, but also provide reflection on the learning process. The idea is to continuously gather assessment data of learning while fostering metacognition in students. Cullen et al. (2012) end with discussions on infusing technology in ways to enhance learner-centeredness and architectural design suggestions to support collaborative learning student use of learning spaces.

In the one article on curriculum development, *The Scholarship of Curriculum Practice and Undergraduate Program Reform: Integrating Theory into Practice*, Hubball and Gold

(2007) describe current global approaches to quality assurance in curricular practices. Learning-centered curriculum design offers a divergent path from traditional curricular practices which historically consisted of deciding on and, in some cases, arranging a select group of courses to give broad experiences to students. Learning-centered curriculum design offers a way to integrate learning experiences to better reach learning outcomes by implementing an organized learning approach based in constructivist learning theory among others. A uniform finding is that vast amounts of research have taken place in the scholarship of teaching and learning realm while less has occurred in the arena of the scholarship of curriculum. Scholarly approaches in the area of learning-centered curriculum should offer support for ongoing curricular programming in this area.

In the chapter, *Supporting Curriculum Assessment and Development: Implications for the Faculty Role and Institutional Support*, Hughes (2007) focuses on broad topics faculty and institutions will need to have a working knowledge of in order to function in “learning centered curriculum, interdisciplinary programs, and constructivist pedagogical approaches” (p. 107). Faculty will need to “become adept at working in teams, facilitating change, project management, and facilitating learning” (Hughes, 2007, p. 108). Faculty must also develop proficiency with “curricular assessment and development process and learning-centered or constructivist pedagogical theory” (Hughes, 2007, p. 108-109). Because of these needs, institutional support in the form of training to assist faculty development in these areas is paramount.

Lastly, in an essay regarding the reforming of doctoral curricula in nursing, Ironside (2006) argues for doctoral research to engage multiple paradigms during teacher preparation to

create authentic teaching practices which are dynamic and better reflect the broadening scope of nursing.

In summary, peering through the lens of faculty and student experiences in LC environments can help faculty better understanding the issues of LC environments, in addition to the mistakes and progress made when addressing specific issues often encountered. Literature on creating LC courses, attaching oneself to a mentor, and developing curriculum can assist faculty transition to a LC teacher. Finally, engaging multiple modes of discourse i.e. critical-social, feminist, post-modern, etc. (Ironside, 2006) can assist faculty to better prepare students to engage nursing practice.

Literature on Student Enhancement: How to Help

Literature on helping students to prepare and function in LC environments is limited. One book and two articles are published on this topic. Doyle's (2008) book is a guide for faculty to assist students to learn how to function in learner-centered environments. Two articles address the stressful nature regarding transitioning to LC learning (Bunton, 2000; McLean & Gibbs, 2009). Lastly, one article offers suggestions to help students achieve their goals (Mitchell, 2006).

In his book, *Helping Students Learn in a Learner-Centered Environment: A Guide to Facilitating Learning in Higher Education*, Doyle (2008) presents an explanation of learner-center education including what it is, why it is important to teach using learner centered approaches, and what implications there are for students and teachers. He spends the majority of the text explaining how to help students adjust to this style of teaching. Doyle (2008) advises that learning to be learning-centered will be a foreign concept to many students since a majority of them have only ever experienced teacher-centered classes. The essence of learner-centered teaching is that within learning environments teachers begin to realize the importance the learner

should play. Teachers using learner-centered practices seek to promote skills essential to independent learning. These skills include taking responsibility in learning, realizing the benefits of collaborating and communication with others during the learning process, and using assessment and reflection to help clarify understanding. These skills are essential to assimilate if individuals are to develop quality lifelong learning habits. Doyle (2008) offers several helpful appendices at the end of the text for faculty interested in advancing learner-centered strategies in the classroom.

Bunton (2000) and McLean and Gibbs (2009) offer discussions regarding the difficulties students encounter in LC classes and offer suggestions to assist them in these environments. First, Bunton (2000) discusses learning-centeredness and making lectures dynamic by instituting learning-centered practices. She begins by detailing the saturation of physician assistant curriculum and how having to attend to copious quantities of information precludes faculty from being able to go in depth on topics and students being unable to learn topics thoroughly and soundly enough to reason through problems. She advances that learning-centered strategies which institute “cooperative, collaborative and supportive” (p. 113) environments, increase the number of experiential chances, respond to learners’ individual needs, and allow for reflection on learning and progress offer an answer to this problem. Bunton (2000) details several strategies to institute during lectures to enhance the learning-centeredness. She advises limiting length of lectures to 10 to 15 minutes, have students review their notes, have students compare notes with others, and have students collaborate on important aspects of the topic(s) (Bunton, 2000). Using a variety of strategies will address various learning style strengths students possess.

In an essay on LC education and stress, McLean and Gibbs (2009) discuss a shift in medical student education to more learner-centered approaches employing methods such as

problem-based learning. The authors make the point that being in school is different than being out of school and questions whether the shift in approach takes this notion into account. McLean and Gibbs (2009) cite Brandes and Ginnes 1986 publication regarding six student-centered principles on learning. According to principles students should assume full responsibility for learning, student engagement becomes a necessity for learning, student partnerships are integral in the learning process, growth and development are encouraged, teachers become more facilitators and resource persons in the education system, students experiences become recognized as central in the learning process, and learners begin to recognize themselves as changed by the learning experience. McLean and Gibbs (2009) conclude the paper with a series of questions to caudify their argument that curriculum revision takes into account some of the real-life issues often missed in educational experiences such as paying attention to the psychosocial well-being of students, offering courses that engage personal interests of students, and actually helping students transition to practice.

Lastly, Mitchell (2006) reframes the student-centered versus learning-centered argument as one of emanation versus generation. He begins his essay relating the difference between caring for students as opposed to caring about students. Caring for students is by nature taking care of all needs of the student, such as giving answers, focusing on teaching, providing leadership, etc. He identifies this as emanation in that that the teacher is the central focus and all things come from the teacher. This is problematic because learning is not the focus, the teacher is. Caring about students is discussed as putting the student in situations encouraging them to ask questions, focus on personal learning, to develop leadership abilities. He identifies this as generation where the student is expected to apply learning independent of the teacher. Citing Davis and Murrell, Mitchell (2006) relates that “learning is only possible when students become

accountable for their own learning and behavior” (p. 29). Further, “educators do students a disservice when caring for students precludes students from taking responsibility” (p. 29). Organizations that are learning-centered strive to make programmatic and service decisions based on how it produces learning and personal development. “The student is still the object of the intervention, but learning is the objective” (Mitchell, 2006, p. 30). To this end, Mitchell (2006) offers three suggestions to help students achieve their goals: (1) base education programs and services on desired student outcomes; (2) design educational outcomes towards higher learning levels, and (3) encourage experimentation and risk in learning. Help students develop “the capacity to try, fail, and try again” (Mitchell, 2006, p. 30).

In summary, shifting to a LC style of teaching offers students a chance to engage topics at a more in-depth level and better develop the knowledge, skills and know-how needed to function in the professional work environments (Bunton, 2000). A major issue is that students need help transitioning to LC styles of teaching and learning. Doyle’s (2008) text offers several examples which can assist faculty to help students make the transition. Additionally, paying attention to students’ psychosocial well-being, offering courses that engage personal interests of students, and helping students transition to practice can benefit students (McLean & Gibbs (2009). Finally, basing education programs and services on desired student outcomes, designing educational outcomes towards higher learning levels, and encouraging experimentation and risk in learning can positively impact student learning (Mitchell, 2006).

Literature on Learning-Centered Frameworks and Models

The LC paradigm is transforming the way many faculty and students approach and engage teaching and learning. As noted through this chapter, essential components of the LC paradigm include collaborative learning experiences, students assuming personal responsibility

in learning, faculty using a variety of LC pedagogies to develop student knowledge and reasoning ability, and frequent and ongoing assessment and evaluation of progress towards course and program outcomes.

Literature on how these essential components are modeled in the design of learning environments is limited in the empirical and theoretical research in nursing. To enhance understanding of models and frameworks, the literature search was expanded to fields outside of nursing in the databases of ERIC, CINAHL, and ProQuest Nursing and Allied Health.

To begin, the instruction-centered philosophy of learning continues to negatively impact many faculty adopting LC methods and frameworks in course design. Schaefer and Zygmunt (2003) analyzed teaching styles of faculty to see whether they “promote a student-centered or teacher-centered learning environment” (p. 238). Although faculty philosophies about teaching and learning were self-reported as more aligned with student centeredness, the findings reveal that faculty use more teacher-centered activities than student-centered ones. Additionally, student needs and involvement in the education process were found to be lacking. Likewise, Pardue’s (2006) reports on a survey of nursing deans, directors, and chairpersons regarding the NLN’s position statement on innovations in the education of nurses found curricula in nursing continuing to be “content laden, highly structured, and concentrated on measurable objectives” (Pardue, 2006, p. 54). The author reports that “in general, nursing schools are inflexible and prone to reinforce the exceedingly structured nature that prevails throughout most nursing education” (Pardue, 2006, p. 54). The respondents felt “their responsibility [is] to ensure that all content in the curriculum is ‘covered’” (Pardue, 2006, p. 54). The authors conclude that “our philosophical approaches surrounding teaching and learning [have] remained...static” (Pardue, 2006, p.55).

As a way forward, many individuals are attempting to design and evaluate learning environments which engage aspects of LC paradigm. The balance of this section will explore emerging frameworks and models employed to enact the LC paradigm. Also, each of the papers relate that the model or framework under discussion is learning-centered.

Course Design Models / Frameworks

Interactions Model for elearning (Alsharif, 2006)

Alsharif (2006) evaluated the impact of course design regarding four important interactions including learner-to-content, learner-to-instructor, learner-to-learner, and learner-to-interface in a web-based course. Web-based students' performance has been consistent during four consecutive years. Students report feeling a sense of community with faculty and other students, having more connection with class content, and feeling more confident when using technology (Alsharif; 2006).

Instructional Model Utilizing Bloom's Cognitive and Krathwohl's Affective Taxonomies (Alsharif & Galt, 2006)

In an abstract, Alsharif and Galt (2006) report on the integration of Bloom's cognitive and Krathwohl's affective taxonomies into an instructional model for teaching medicinal chemistry. Student performances and enthusiasm for the chemistry course improved when comparing the new model to traditional course model over successive years. Directly integrating cognitive and affective learning objectives can enhance how students view the application of course content to practice. Alsharif and Galt (2006) report the results support use in face-to-face and online courses.

Active, Interactive, and Reflective Model (Berge, 2002)

Berge (2002) presents a learning model for e-learning environments. He relates his model is based on aligning learning goals, learning activities, and feedback/evaluation. To implement

his model, Berge (2002) advises that “learning environments should be designed in a way that learning is situated in context, it is learning-centered, and there should be planned pre-learning activities” (p. 183). He presents a discussion of each of these components of the e-learning environment.

Five Practices of Learner-Centered Teachers (Blumberg & Pontiggia, 2011)

One of the more widely cited course design models is Mary Ellen Weimer’s five practices for learner-centered teachers (Blumberg & Pontiggia, 2011; Cullen et al., 2012; Doyle, 2011; Greer et al., 2010; Weimer 2002, 2012; Wohlforth et al., 2008). As noted previously, Weimer’s model requires students to make more decisions about their learning, changes the focus of course content towards helping students handle emerging problems, redefines the classroom roles where teachers function as facilitators and students as pursuers of knowledge and pathways of solutions, shifts accountability for learning to students, and re-characterizes evaluation processes with a concern for fostering student’s continuing development and not punishing based on performance. In Blumberg and Pontiggia’s (2011) article on benchmarking learner-centered approaches in curricula, the authors developed and evaluated an instrument based on Mary Ellen Weimer’s five practices of learner-centered teachers. They evaluated syllabi from core courses at one institution for their sample. The instrument further evaluated whether the instructor appeared more instructor-centered or learner-centered from syllabus design. Blumberg and Pontiggia (2011) discuss their process of developing the instrument and evaluating for reliability and validity. They further evaluated 72 syllabi. Results identified that overall faculty are not using many learner-centered practices. Syllabi of contingent faculty were found to be more instructor-centered when compared to full-time faculty. Full-time faculty were found to have higher average scores in all of Weimer’s learner-centered practices when

compared to contingent faculty. No significant differences were identified using analysis of variance comparing the five different indices. The authors noted that according to the findings professional development regarding each area of learning-centered practice would be useful. The dimensions of the instrument do not address collaborative efforts of students with students and students with faculty. Nor does the instrument specifically address a focus on developing a learning-centered culture.

Principles of Instructed Language Learning Model (Ellis, 2010)

In this article, Ellis (2010) argues that, at present, “research and theory do not afford a uniform account of how instruction can best facilitate language learning” (p. 210). Ellis (2005) presents his initial ideas or “provisional specifications” (p. 2010) towards development of a learning-centered language pedagogy. He presents 10 principles encompassing the pedagogy. The first principle the learning-centered language pedagogy is developing broad knowledge of formulaic expressions i.e. fluency, and rule-based competence i.e. grammatical understanding, of the second language. The second principle is focusing on semantic meanings i.e. grammatical structures, and pragmatic meanings i.e. contextualized premise, in the second language. The third principle is to focus on form or attending to language in context of situations. The fourth principle deals with developing knowledge that is implicit i.e. what the underlying meaning is, and explicit i.e. what is verbalized as the meaning. The fifth principle takes into consideration “the learner’s built-in syllabus,” (p. 216) i.e. preexisting understanding. The sixth principle is to increase exposure to the language to be learned. The seventh principle is to increase opportunities for practice. The eighth principle is to increase interaction or collaboration among learners. The ninth principle is to match instruction to learner’s aptitude. The tenth principle is the need to assess the individual’s ability to communicate in the second language. Ellis (2010)

points out that the model is a fitting beginning but further realizes the model has a couple deficiencies including a lack of social sensitivity and a need to focus on how individuals “internalize new linguistic forms and how they restructure their linguistic knowledge in the process of acquisition” (p. 222).

Four Modules Framework (Goldman, Shah, Greenberg, & Cogen, 2012)

Goldman, Shah, Greenberg, and Cogen (2012) report on the development of a learning-centered curriculum for medical residents to employ so as to better address the differing learning styles of diabetic patients. The authors based the curriculum on “Kolb’s experiential learning theory” (p. 46). The process of this theory is circular and follows a four component cycle: concrete experiences, reflective observations, abstract conceptualization, and active experimentation (Goldman et al., 2012). The curriculum has four modules including an initial self-paced module with case study followed by three face-to-face modules covering a wide array of issues involving diabetes. Results include overall satisfaction with the curriculum and 50% decrease in medical errors per inpatient days by residents.

Three-Step Framework in Outdoor Education (Hubball & West, 2009)

In their essay, Hubball and West (2009) argue that Outdoor Education (OE) experiences that are activity-focused and teacher-centered will not adequately respond to student’s specific developmental needs, will restrict creativity, and limit achievement of broad learning outcomes. Students would benefit more from inclusion in group planning processes for activities thereby attaining valuable life skills such as “critical thinking, self-directed learning, decision making, communication, and team building skills” (Hubball & West, 2009, p. 26) associated with the process. The authors provide a strategy to facilitate learning centered planning. The framework involves a three-step process including an introductory phase where a review of the last session

activity and an introduction to a new topic takes place, an activity phase which engages the student in planning all aspects of an activity including establishing goals, objectives, developing activities and evaluation processes, and a reflection phase where students evaluate all aspects of the project or activity including personal development in the process. Hubball and West (2009) posit that a learning-centered approach to OA will improve learning outcomes.

Know-Be-Do Framework (Kantor, 2009)

Kantor (2009) relates a personal experience shifting from a traditional TC approach to educating to one focused on a concept-based student-centered approach. By encouraging students to take charge of their learning by concentrating “on concepts, students [were able to] increase their understanding of health patterns and how to logically and systematically organize information, facilitating critical thinking skills” (Kantor, 2009, p. 415). By adopting the Know-Be-Do (KBD) framework which encourages one to understand, plan, deliver, and reflect, the author was able to shift her teaching approach in the didactic portion of the course to a more collaborative approach towards teaching, not depending so much on covering all content (Kantor, 2009). Students were able to gain a more holistic understanding of their patient as opposed to the more linear one they achieved in the past (Kantor, 2009).

Humanistic Model (Kleiman, 2007)

Kleiman (2007) integrated a humanistic teaching model as the theoretical framework for the nursing curriculum at a large university in New York City. By encouraging valuing of the individual and exploring the reciprocal responsibility that humans have with one another, Kleiman (2007) reports that students were able to learn about the importance of “contributing to the dignity, happiness, and well-being of persons with whom we interact” (p. 210). Through the practices of collaboration, reflection, and articulation - all components of a LC approach -

students were able to develop a more sophisticated understanding of conceptions associated with humanism i.e. existentialism and phenomenology, and were better able to apply them in their nursing practices (Kleiman, 2007).

Cooperative Technical Teacher Training Model (Kodasko & Koppany, 2004)

Kodasko and Koppany (2004) offer a model for “mass-level higher education” for engineering students in a Hungarian university as a response to a need for more technical training teachers in the country. Driven by an increase in student population, budgetary constraints, and the need for technical training teachers, the authors developed the “cooperative technical teacher training” (p. 27) model, as a way to prepare students for two alternative professions simultaneously. In the four semesters of major coursework, three are devoted to engineering training and one to teaching training. The teacher training module is said to be learning-centered in that it seeks to develop partnerships between students and teachers and use new types of teaching and learning strategies and assessment and evaluation practices. The study authors report that the experiences during this pilot project verified that quality education was preserved with the addition of this learning-centered model.

Taxonomy of Significant Learning (Magnussen, 2008)

In *Applying the Principles of Significant Learning in the e-Learning Environment*, Magnussen (2008) explores experiences during the departmental move to apply Dee Fink’s (2003) text on principles of significant learning to a new Doctor of Philosophy in Nursing e-learning program. Three initial concerns were preserving the interactive nature of face-to-face class time, continuing to emphasize collaboration among individuals in the class, and ensuring faculty skill level in the e-learning environment. Results from a faculty survey revealed 80% spent more time in planning and conducting the e-learning course and 47% actually preferred

teaching in the online format. Overall, the web-based teaching environment was reported as a viable method for this program.

Multiple Levels of Knowledge Framework (Raines, 2008)

In the article, *A competency-based approach to the nursing research*, Raines (2008) discusses an approach to teaching nursing research which goes past the mere accumulation of factual knowledge by becoming learner-centered. Raines (2008) emphasizes that second-degree students are “active, goal directed, self-actuated problem solvers with accumulated life experience that influences what is learned” (p. 375). As such, education needs to be flexible and should attempt to connect “knowledge, skills, intention to act, context of performance and the effect of interpersonal aspects of achievement” (p. 375). In this article, Raines (2008) offers a framework with course outcomes based on the multiple levels of knowledge in Bloom’s taxonomy. She relates the experiences in an online course with second-degree students. Students reported positively to this learner-centered course design.

Five Viewpoints Model (Reynolds, 2006)

The hallmarks of this model are multidimensional instruction, positioning students to control and direct their own learning, consideration of differing learning style, addressing learner motivation, and scaffolding learning experiences (Reynolds, 2006). Reynolds (2006) offers that a transformation in educator’s mindset regarding teaching and learning needs to take place if students are to develop the 21st century skillset often advocated. How the learner and the process of learning are situated in one’s philosophical understanding of learning is at the core of what needs changing. Reynolds (2006) begins with the idea that learning needs to be multidimensional in that learning activities should engage a learner cognitively, emotionally and physically. The author relates that learning should be fun and engaging similar to a hobby to meet these various

human aspects. Second, students need to be positioned to control and direct their own learning. By offering multiple types of assignments to choose from, the learner can pick what seems personally interesting, but still remain within the focus of the course. A third consideration is that learning style characteristics need to be regarded so students can personally consider what strategy(ies) they need to employ to be successful. Fourth, learner motivation needs to be addressed. To enhance intrinsic motivation towards learning, there needs to be a shift in focus with students assuming more control over what they learn, how they will learn it, and how they will be evaluated. Finally, students should be increasingly offered more control in selecting resources to support their learning. This offers practice in working individually and within groups to better solve issues. A shift in these five viewpoints can offer students the opportunity to hone the authentic skills necessary for work and life.

Miller's Wheel of Professionalism in Nursing Model (Rhodes, Schutt, Langham, & Bilotta, 2012)

Rhodes, Schutt, Langham, and Bilotta (2012) discuss use of Miller's Wheel of Professionalism in Nursing as a design guide used for a seminar series on professionalism in nursing in a baccalaureate nursing program in a southern state. Employing this wheel using a learner-centered conceptual framework, students engage issues in professionalism in nursing through interacting with material, each other, and with faculty. The authors conceptualize learner-centered as following adult learning theory and social cognitive theory. They frame their conceptual framework by paying attention to prior knowledge of the learners to help direct learning pedagogies, assessment of their readiness to learn and what they need to learn, and that individuals learn best in group process by working with each other and along with the guidance of individuals providing guidance. Rhodes et al. (2012) purport their impression is the twice a

year seminar format promotes critical thinking, in-depth exploration of issues, and improved professionalism. No data is offered in either qualitative or quantitative format.

Learning Cycle Model (Roberts, Perryman, & Rivers, 2009)

In a discussion paper, Roberts, Perryman, and Rivers (2009) outline an approach for healthcare management faculty to employ learning-centered approaches in learning outcome assessment, offer justification for learning-centeredness as an effective means for helping students develop and transfer knowledge to practice, and offer strategies for classroom learning purposes. The steps involved in assessing student learning outcomes include first, “using multiple approaches in formulating student learning outcomes, employing a variety of evaluation tools, and also limiting content to the most important knowledge needed for successful practice” (Roberts et al., 2009, p. 141). Second, create learning experiences, engaging faculty and students in collaboration, that directly “lead to desired outcomes” (Roberts et al., 2009, p. 141). The last step includes a recursive process to address results in student learning assessment. The authors refer to this as a “learning cycle” (Roberts et al., 2009, p. 142). Student knowledge can be further developed by engaging in practical problems of “stakeholders, particularly policy makers and employers” (Roberts et al., 2009, p. 142). The authors offer an approach to addressing practical problems. Implementation strategies offered including less lecture and increased use of “new teaching styles and methods” (Roberts et al., 2009, p. 143). Student learning outcomes should be addressed through teaching techniques, collaborative activities, applied practice, and learning linkages.

Community of Learners Model (Steiner et al., 2010)

Steiner, Hewett, Floyd, Lewis, and Walker, (2010) revised a nursing learning theory course. At the outset, students were asked to form into a “community of learners to build the

syllabus, including course content, structure and evaluation” (Steiner et al., 2010, p. 12).

Students reported that they felt more confident in their skills as an educator after working within the community of learners and having to assume more control in the learning process. Faculty report some difficulty with giving up control, but voiced a common sentiment that if they truly believe in learner-centered learning, they must allow this type of change to occur (Steiner et al., 2010).

Integrated Lecture Model (Welder & Coffman, 2006)

Welder and Coffman (2006) report on a reorganization of a course into an integrated lecture model. By integration the authors mean that separate lectures on a specific topic were meshed. All faculty who were previously assigned to teach the isolated lectures attended class and discussed their content as appropriate to the topic when applicable. The authors report that the organization and delivery of lectures in this format enabled authentic and mutual conversations, thereby helping students to grasp the content on a more global manner. Students reported a high level of satisfaction with this model in regards to the design.

Knowledge-Based Mobile Learning Framework (Tien-Yu, Hao-Ren, & Wei-Pang, 2006)

Tien-Yu, Hao-Ren, and Wei-Pang (2006) developed the Knowledge-Based Mobile Learning Framework for a museum experience which employs data-mining strategy to extract information of interest. This software program engages the three stages of the framework. The three stages include a (1) pre-visit learning stage, (2) the onsite-visit learning stage, and (3) the post-visit learning stage (Tien-Yu et al., 2006). During the pre-visit stage, students engaged in an online review of content available in the museum and select information which is of interest. During the onsite-visit stage students log into the system and are given a plan based on their learning interests. During the post-visit learning stage students are given additional content and recommendations for future experiences.

Curricular Design Models / Frameworks

Design Model for Post-Modern Curriculum (Cullen, Harris & Hill, 2012)

In the book, *The Learner-Centered Curriculum: Design and Implementation*, Cullen, Harris, and Hill (2012) present their notions regarding post-modern curriculum design and implementation in lieu of compelling amounts of research advocating learner-centeredness. Traditional approaches to curricular design are at odds with a post-modern view that “focuses on the learner’s construction of knowledge and the transfer of that knowledge within different contexts” (Cullen et al., 2012, p. 46). The authors relate that an important component of learner-centeredness is the need “to develop creative, autonomous learners who can readily adapt to a rapidly changing society” (Cullen et al., 2012, p. 21). Cullen et al. (2012) offer that although many institutions relate they are learner-centered, they are referring more-so to the use of learner-centered pedagogies by individuals and not broad curricular approaches. In chapter two, the authors challenge five enduring notions of curricular design and implementation including that (1) “curriculum needs to be linear because learning is a linear, additive process” (p. 35), (2) “everyone learns in the same way, as receivers of knowledge” (p. 42), (3) “the time it takes to learn something is indicative of [intellect]” (p. 37), (4) error in thinking is negative, representing decreased intellect, and (5) “knowledge is an entity to be controlled and owned” (p. 38).

Cullen et al. (2012) advocate employing constructivist ideas of how people learn - which is not a linear process. In discussing Jerome Bruner’s views on learning, the authors relate learning design is more fluid and needs to occur in a spiraling process where concepts are revisited (Cullen et al., 2012). Time restrictions cannot be placed on learning. Error is actually positive from a post-modern view in that “it is an opportunity to learn and expand” (p. 37). Finally, they challenge that disciplines do not own knowledge. Curricula should not be organized

“according to discipline and discipline history” (Cullen et al., 2012, p. 38). Individuals should not lose credit when transferring from one discipline to another. To this end, Cullen et al. (2012) outline a framework for developing curriculum infusing a learner-centered format. They advocate using a recursive curricular design based on Doll’s “four criteria for a post-modern curricular design [including] richness, relations, recursion, and rigor” (Cullen et al, 2012, p. 47) to achieve a desired effect of learner-centered learning including “community building, power sharing to foster learning autonomy, and ongoing assessment for continuous improvement” (p. 64).

Cullen et al. (2012) provide discussion on leading curricular implementation and adopting learner-centered teaching strategies. Additionally assessment strategies need to encourage learner autonomy, but also provide reflection on the learning process. The idea is to continuously gather assessment data of learning while fostering metacognition in students. Cullen et al. (2012) end with discussions on infusing technology in ways to enhance learner-centeredness and architectural design suggestions to support collaborative learning student use of learning spaces.

Excellence in Nursing Education Model (Davis, 2011; NLN, 2006)

Davis (2011) describes a conceptual model of curriculum design which originated during the course of curricular revision at a community college in Mississippi. The authors relate the goal was to shift to a learning-centered approach to teaching. The faculty used a Delphi method to rewrite the mission and philosophy. The faculty used The Excellence in Nursing Education Model© (NLN, 2006) as the framework for the new curriculum and process. This model has a basis in eight elements including (1) Clear Program Standards and Hallmarks that Raise Expectations; (2) Well-prepared Faculty; (3) Qualified Students; (4) Well-prepared Educational

Administrators; (5) Evidence-based Programs and Teaching/Evaluation Methods; (6) Quality and Adequate Resources; (7) Student-centered, Interactive, and Innovative Programs and Curricula; (8) Recognition of Expertise (NLN, 2006). Davis (2011) relates that there has been no change in grades and retention rates since implementation of the new curriculum.

Tree Framework (Freed & McLaughlin, 2011)

In *FUTURES THINKING: Preparing Nurses to Think for Tomorrow*, Freed and McLaughlin (2011) present thoughts on the future of nursing education for 2045. Their vision is that nursing education will have a framework which includes a learner-centered approach to teaching in one tree, diverse students and a global community in another tree, faculty support and development in a third tree, and the teacher role defined as educator, liaison-consultant, and entrepreneur in a final tree. Each of these trees has further levels that define additional ways of operationalizing the main tree heading. The purpose of this essay is to engage nurses about being proactive about their future.

Content Driven Model (Gehart, 2011)

In this article, Gehart (2011) offers educators in marriage and family therapy programs guidance towards adopting learning-centered, outcomes-based pedagogical approaches in teaching practices and curriculum design to better address national core competencies for the marriage and family therapist degree. Gehart (2011) reviews the emergence of the core competencies as a national effort to improve the competence of graduates. Gehart (2011) relates the most difficult shift may be for faculty to change the ways they teach. Content-driven models, where the focus is merely measuring factual knowledge acquisition, are no longer enough to assist students to acquire the additional prowess of skills, know-how, and values to competently address the needs of patients. To this end, Gehart (2011) offers a seven-step process to assist program transition.

Johnson's Curricular Model (Monaghan, Jones, Haddad, Ineck, & Al, 2005)

Monaghan, Jones, Haddad, Ineck, and Al (2005) offer using Johnson's curricular model as a way for designing assignments to assess abilities of students. According to this model, one plans in reverse from student learning outcomes. The authors relate that this model illuminates the teaching, student learning, and assessment connection. Using this model, Monaghan et al. (2005) studied pharmacy students using with cases designed to measure outcomes based on national standards. Students scored 50% on the performance based assessments.

Curricular Integration Model (Pearson & Hubball, 2012)

Pearson and Hubball (2012) describe the return of the concept "curricular integration" (p.1) into the broader discussion of curricular reform in pharmacy education. They offer the definition that integration is an approach to creating educational experiences that are clear, pertinent, and engaging by connecting various disciplines knowledge and affecting sophisticated levels of thinking (Pearson & Hubball, 2012). Integration in theory is a way to make content relevant, but warn that use of integration without due diligence to exploring the risks, benefits, and barriers can create a system just as troublesome as traditional curricular planning and implementation methods. The authors spend the balance of the paper defining differing aspects of integration and further exploring the risks, benefits and barriers of integration.

Three aspects where integration may be problematic include exacting what the term integration means, deciding how the integration is understood, and realizing curriculum has differing conceptions. Integration can mean multidisciplinary, interdisciplinary, or transdisciplinary. Integration may be understood as integrated where students are shown how individuals in a discipline think or process through information, or integrative where students are allowed to create their own knowledge. Finally curriculum can be one of three types: espoused,

enacted, and experienced. The authors offer that these curriculum types diverge and coincide in differing manners which may trouble learner's experiences. The authors further discuss vertical and horizontal curriculum integration. Understanding these aspects is integral to successful curricular planning

Benefits of integration can include highly intricate structures which model authentic environments and pedagogies that engage and develop deep understanding of issues. Risks and barriers to curricular integration include colliding against disciplinary histories with distinct views and conventions, dealing with difficulties of planning and implementing concepts horizontally and vertically, and facing lack of evidence on evaluative outcomes regarding integration curriculum.

Three Cs Model (Schug, 2012)

In the article, *CURRICULUM EVALUATION Using National League for Nursing Accrediting Commission Standards and Criteria*, Schug (2012) presents a curriculum evaluation model, the Three Cs Model, employed by faculty at a university in the Midwestern United States. This model reportedly assists with examination of “*curricular context, content, and conduct.*” (p. 303). The authors suggest that “curricular content cannot be isolated and must be examined in light of the milieu or *context* of curricular delivery as well as the implementation or conduct of curricula” (p. 303). The author reports this as a helpful model during curriculum evaluation. Only anecdotal notions exist. No quantitative or qualitative data are offered.

Integrative Curriculum Model (Weddle & Sellheim, 2009)

Weddle and Sellheim (2009) present a curriculum model based on the learning-centered education paradigm for a physical therapy (PT) doctoral program. The authors' purport the model is designed to prepare students to begin thinking like practicing PTs earlier in their education career. Weddle and Sellheim (2009) relate the main themes of this model include

creating “relevance and context [in] student learning” (p. 13), developing “intellectual skills” (p. 13), employing “active learning where students take control of their own learning” (p. 13), using multiple approaches to learning, and assisting students to “organize knowledge in ways that facilitate retrieval and application” (p. 14). Weddle and Sellheim (2009) employ Kolb’s learning cycle in learning activities. Evaluation of student outcome measures when using this model indicates similar passing rates and employer satisfaction with graduates as noted with the previous curriculum model used.

Institutional and Administrative Design Models / Frameworks

Initiatives Guiding Framework for a Learning-Centered College (Bosch et al, 2008)

Bosch and colleagues (2008) upon analyzing years of data from three surveys of institutional performance e.g. The Student Opinion Survey, the Faculty Survey of Student Engagement, and the National Survey of Student Engagement, found several concerns appearing to not reflect the mission and vision as stated by the institution. Disappointing findings related to perceived levels of “student engagement in learning and high faculty expectations for student performance” (Bosch et al, 2008, p. 85) were identified. Study authors conducted an action research study using focus groups in a qualitative format with students, faculty, staff, and administrators to “define the nature of the learning-centered college and renegotiate [the] shared expectations and values of the institution in an attempt to facilitate and spread practices and conditions that foster [a culture of] meaningful learning” (Bosch et al, 2008, p. 85). The sample included 115 students and 90 faculty, staff, and administrators. There were 15 focus groups ranging in size from 10-25 participants each. The authors operationalized a definition of a learning-centered college in a framework to guide future college initiatives. The framework involves improving communication, collaboration, and reciprocal respect between faculty and

students, enhancing critical thinking skills, expecting faculty and students to set high expectations for each other, using multiple teaching and assessment strategies including more outside of class learning opportunities, and improving student responsibility for personal learning.

Learning-Centered Model of Administration (Del Favero, 2002)

In this paper, Del Favero (2002) takes on the notion that college and university “administrators have nothing to do with learning [because] student learning outcomes commonly fall outside” (p. 60) the scope of administrative function. Del Favero (2002) relates that this notion is one that may be ingrained as “an unfortunate byproduct of closely held paradigms about the separation of academic and administrative work” (p. 61). Del Favero (2002) points to Haberman’s argument that administrator’s strong allegiance to the model of “oversight [seems to] represent a deliberate effort to protect administrators from accountability with respect to what is viewed by society as the primary purpose of higher education institutions” (p. 61). In asking to what extent might this be compromising student’s learning experiences, Del Favero (2002) seeks to explore “the relationship between administrative work and student learning” (p. 61) offered in the literature. She develops a learning-centered model of administration which includes three dimensions including, “resource management, student services or support, and program support” (Del Favero, 2002, p. 75). The author relates that this model offers a “comprehensive way of linking instructional and noninstructional activities” (Del Favero p. 82) which would be more easily understood by the various stakeholders and further assist and focus decision making in colleges and universities.

Learning-Centered Leadership Framework (Goldring et al., 2009)

Goldring et al. (2009) conducted a systematic evaluation of leadership evaluation instruments used to evaluate principals. The authors used the learning-centered leadership framework based on core components and key processes. This leadership framework is based on literature regarding what is “associated with improved teaching and increased student achievement” (Goldring et al., 2009, p. 23). The core components include “high standards for student learning, rigorous curriculum (content), quality instruction (pedagogy), culture of learning and professional behavior, connections to external communities, and performance accountability” (Goldring et al., 2009, p. 24). The key processes for each of these components according to Porter (as cited in Goldring et al., 2009) include “planning, implementing, supporting, advocating, communicating, and monitoring” (p. 24). Findings reveal many of the evaluation instruments “have limited focus on curriculum, instruction, connections to external communities, and specific accountability measures” (p. 34). Curriculum that is rigorous and instruction that is sound are two of the essential components that augment student learning. Final findings include a high degree of variability in how instructors are evaluated and a lack of psychometric support for a majority of the evaluation tools.

Co-Curricular Activities Program (CAP) Model (King & Anderson, 2004)

King and Anderson (2004) propose a program model for a Student Affairs Division in their article, *A Practitioner's Guide to a Learning-Centered Co-Curricular Activities Program*. Such a model would offer “a framework for campus-wide programming that is grounded in theory, goals and objectives” (King & Anderson, 2004, para. 1). Additionally, this model would offer a way to assess the impact of such a program and accountability of Student Affairs Divisions. Citing the fundamental conditions of student development of Bliming and

Miltenberger (2004), the authors based the Co-Curricular Activities Program (CAP) model on a belief that students develop in stages, students are responsible for their development, student affairs staffers should assist students to accomplish goals, and individuals should be developed in a holistic manner focusing on intellectual, physical, emotional, and spiritual needs. The CAP has specific goals and objectives for each year of college from the freshman through the senior years. The ultimate goal is for student affairs divisions to become learning-centered in focus and for meaningful change to occur in student lives.

Learning-Centered University Framework (Koester, Hellenbrand & Piper, 2005, 2008)

Koester, Hellenbrand, and Piper (2005) discuss the California State University at Northridge's move to become a learning-centered campus. In *Exploring the Actions behind the Words "Learning-Centered Institution,"* the authors present a set of 16 principles the university employs to be a learning-centered campus and, likewise, offer that they provide an operational definition of learning-centeredness (Koester et al., 2005). Examples of department and faculty practices necessary for employing learning-centered approaches are presented. In 2008, Koester, Hellenbrand, and Piper offered a second article noting those 16 principles in a six general categories framework. The first category relates to linking the class learning objectives and experiences with the university mission (Koester, Hellenbrand, & Piper, 2008). The second category entails developing experiential learning experiences for students (Koester et al., 2008). The third category requires use of technology in all aspects of course facilitation (Koester et al., 2008). The fourth category relates to re-envisioning courses by skill and knowledge sets and not by credit hour contact (Koester et al., 2008). The fifth category concerns a requirement for faculty and university employees to receive professional enhancement to transition into a culture of learning-centeredness (Koester et al., 2008). The sixth category entails reflecting a LC ideal in

all employment opportunities at the institution (Koester et al., 2008). The authors offer that this framework allows the university to adopt new pedagogies and support them as evidence accrues (Koester et al., 2008)

Organizational Elements Model (Kelley & Kaufman, 2007)

In the article, *Integrated strategic planning in a learning-centered community college*, Kelley and Kaufman (2007) relate the implementation of a strategic plan to create a learning-centered college at Valencia Community College in Florida. The school employed the Organizational Elements Model which “is a conceptual as well as mental model that enables an organization to view itself as a system with three levels of results (*mega* or societal, *macro* or organizational, and *micro* or operational), providing a practically and theoretically sound framework for strategic thinking and planning” (Kelley & Kaufman, 2007, p. 47). No data regarding success or failure of the initiative is offered.

The LifeMap Model (Shugart & Romano, 2006)

In their article, Shugart and Romano (2006) present an overview of Valencia Community College’s move to become a learning-centered institution. “LifeMap [is the] career and educational planning system” (Shugart & Romano, 2006, p. 141) adopted by the college. This model attempts to involve each student, respective faculty, and college staff in the student’s educational planning. Authors report this initiative has increased retention and overall credit hours completed. Additionally, the persistence rate, or rate of individuals continuing to remain in school, for individuals involved in developmental coursework has improved from 62% to 90% in the subsequent semester with the institution of the program. This collaborative model has increased the degrees awarded to rank the school first in the nation for community college institutions.

Comparison of Models / Frameworks to Principles of Learning Environment Design

Learning environments need meticulous crafting to best support how individuals learn. The NRC framework regarding the perspectives on learning environment design (Bransford et al., 2000) offers guidance for purposively crafting classroom environments to enhance learning. In synthesizing several decades of learning science research, Bransford, Brown, and Cocking (2000) point to several crucial learning perspectives essential to thoroughly design learning environments. Environments which are designed for optimal learning should employ learner-centered, knowledge-centered, assessment-centered, and community-centered design elements (Bransford et al., 2000). The NRC perspectives form an aggregate framework of practice with overlying and unique principles. Environments that are learner-centered employ design elements that appreciate prior knowledge, skills, know-how, and cultural understanding. Knowledge-centered learning environments employ design elements that ensure knowledge and understanding of content is attainable. Environments that are assessment-centered employ design elements that allow for student thinking to be evaluated and offer opportunity for revision. Lastly, community-centered environments employ design elements that engage the developmental benefits in communal learning.

A review of the literature over the past decade reveals multiple models / frameworks which have been developed and used to enhance course, curricular, and administrative / institutional design. A question posed by this author for this literature review was, just how do current models / frameworks correlate with the NRC framework? For each of these areas a lack of relationship is notable except for one instance (see Table 1). Although there is one model for LC curricular design that meets all four LC perspectives, it appears to incorporate multiple models. Although this possibly could be considered a strength, that is, by incorporating several

Table 1

Learning-Centered Models / Frameworks' Relationship to Learning Environment Design Principles

Category	LC	KC	AC	CC
Course Design Models / Frameworks				
Interactions Model for elearning (Alsharif, 2006)	+			+
Instructional Model utilizing Bloom's Cognitive and Krathwohl's Affective Taxonomies (Alsharif & Galt, 2006)	+	+		
Active, Interactive, and Reflective Model (Berge, 2002)		+	+	+
Five Practices of Learner-Centered Teachers (Blumberg & Pontiggia, 2011)	+	+	+	
Principles of Instructed Language Learning Model (Ellis, 2010)	+	+		+
Taxonomy of Significant Learning (Magnussen, 2008)			+	+
Four Modules Framework (Goldman et al., 2012)		+		
Three-Step Framework in Outdoor Education (Hubball & West, 2009)	+		+	+
Know-Be-Do Framework (Kantor, 2009)	+	+		+
Humanistic Model (Kleiman, 2007)		+	+	+
Cooperative Technical Teacher Training Model (Kodasko & Koppány, 2004)			+	+
Multiple Levels of Knowledge Framework (Raines, 2008)	+	+		
Five Viewpoints Model (Reynolds, 2006)	+			
Miller's Wheel of Professionalism in Nursing Model (Rhodes et al., 2012)		+	+	+
Learning Cycle Model (Roberts et al., 2009)		+	+	+
Community of Learners Model (Steiner et al., 2010)	+			+
Integrated Lecture Model (Welder & Coffman, 2006)		+		+
Knowledge-Based Mobile Learning Framework (Tien-Yu et al., 2006)	+	+		
Curricular Design Models / Frameworks				
Design Model for Post-Modern Curriculum (Cullen et al., 2012)	+	+	+	+
Excellence in Nursing Education Model (Davis, 2011; NLN, 2006)			+	+
Tree Framework (Freed & McLaughlin, 2011)		+		
Content Driven Model (Gehart, 2011)	+	+	+	
Johnson's Curricular Model (Monaghan et al., 2005)	+			
Curricular Integration Model (Pearson & Hubball, 2012)				+
Three Cs Model (Schug, 2012)		+	+	
Integrative Curriculum Model (Weddle & Sellheim, 2009)	+	+	+	
Institutional - Administrative Design Models / Frameworks				
Initiatives Guiding Framework for a Learning-Centered College (Bosch et al, 2008)	+		+	+
Learning-Centered Model of Administration (Del Favero, 2002)	+		+	

Category	LC	KC	AC	CC
Learning-Centered Leadership Framework (Goldring et al., 2009)	+			+
Co-Curricular Activities Program (CAP) Model (King & Anderson, 2004)	+			
Learning-Centered University Framework (Koester et al., 2005)	+			
Organizational Elements Model (Kelley & Kaufman, 2007)	+			
The LifeMap Model (Shugart & Romano, 2006)	+			+

Note. LC = Learner-centered; KC = Knowledge-centered; AC = Assessment-centered; CC = Community Centered; Each model / framework was evaluated according to the four learning perspectives of the NRC i.e. learner-centered perspective, knowledge-centered perspective, assessment-centered perspective, and community-centered perspective (Bransford et al., 2000). If a plus (+) is noted, then an aspect of that model / framework is considered reflective of the associated perspective. Otherwise, if a + is not noted, then that model / framework is not considered reflective of the associated perspective.

necessary steps faculty can assure meeting all four design perspectives, many faculty that have the inclination often do not have the time to cross-reference all correlating models / frameworks. Therefore, based on a meta-analysis of current models / frameworks, the NRC learning perspectives framework (Bransford et al., 2000) offers the most concise and comprehensive framework for course design. This author's opinion is that the NRC framework best reflects how learning environments need designing.

Summary

At the outset of this literature review a goal was to identify what practices, if any, regarding design in learning environments in nursing classrooms was currently taking place. A lack of literature in the field of nursing led to review of all extant literature over the most recent decade. What is apparent is the essential competencies students need to acquire during collegiate years continue to expand. Students do not merely need to graduate and be willing to work, they need to graduate ready to work in diverse environments, to manage time and priorities, to critically consider problems individually and with others, to effectively communicate in multiple

formats, to engage issues with integrity, and to have skills to self-educate on an ongoing basis (Doyle, 2011). No longer will memorization and recitation serve as sufficient modes of learning to support these aforementioned competencies.

Through this chapter, essential components of the LC paradigm including collaborative learning experiences, students assuming personal responsibility in learning, faculty using a variety of LC pedagogies to develop student knowledge and reasoning ability, and frequent and ongoing assessment and evaluation of progress towards course and program outcomes have been offered. A serious roadblock for this paradigm remains the instruction-centered paradigm which continues to be a driving force influencing faculty beliefs regarding how individuals learn best.

These beliefs continue to effect pedagogical choices of instruction often employed within classroom spaces. As nurse educators continue to engage the condition of nursing as noted by field experts (Benner et al., 2009; Candela et al., 2006; Stanley & Dougherty, 2010), many have looked to LC models and frameworks for assistance with course design. Nurse educators must realize that there are mounting benefits of the LC paradigm and follow the expanding research in the fields of the learning sciences and nursing regarding design in course preparation.

For this research project there appears to be insufficient use and application of a unifying model or framework for course design. It is this author's position that the learning design perspectives framework of the NRC (Bransford et al., 2000) is such a framework which can offer a comprehensive approach for course design to assist faculty and student alike. The next chapter of this text presents a research project regarding the development and testing of a rubric for syllabus evaluation based on the learning design perspectives framework of the NRC (Bransford et al., 2000). The goal is to develop a rubric to assist faculty seeking to make better decisions regarding learning design based on learning science.

CHAPTER III

METHODOLOGY

The purposes of this study are to conceptualize and design a rubric for syllabus evaluation based on the framework regarding LED principles from the NRC (Bransford et al., 2000) and to apply this rubric in an investigation to ascertain the propensity of nursing syllabi to reflect LED principles. To create the rubric, this author will expand upon the idea for use of a rubric in syllabus evaluation as performed in previous studies (Blumberg & Pontiggia, 2011; Cullen & Harris, 2009). The NRC principles of LED (Bransford et al., 2000) will serve as the template for rubric design. To accomplish this task, this author will construct a rubric, perform validity and reliability testing to substantiate use of the instrument, complete a structured record review of syllabi using the rubric, and analyze the results. An explanation of each of these steps is in detail below.

Research Method

The structured record review is a type of survey method useful for guiding evaluation of preexisting documents. In general, surveys are systems “for collecting information to describe, compare, or explain knowledge, attitudes, and behavior” (Fink, 1995, p. 1). Fink (1995) describes the structured record review survey as one “that uses a specially created form to guide the collection of data from financial, medical, school, and other records” (Fink, 1995, p. 46). As a type of survey, structured record reviews are particularly useful for gathering data when one seeks to better understand a phenomenon.

The purpose of survey research is to offer a “numeric description” (p. 145) of an area of interest regarding a subset of a group being studied (Creswell, 2009). A survey is the preferred type of data collection procedure for this study as the sample includes syllabi which are available via the internet. Use of a survey, in the form of a rubric on the study sample, will allow for appropriate collection of data. This survey will specifically be a descriptive design survey of which its purpose is to “produce information on groups and phenomena that already exist” (Fink, 1995, p. 25).

Rationale for Use of the Syllabus

There are many artifacts faculty and students create for and in the learning environment. One of the notable artifacts which faculty create is the syllabus. The rationale for using the syllabus in this research project is that as an artifact of design of the learning environment, this document can provide indication as to the nature of the intended learning environment (Blumberg & Pontiggia, 2011; Cullen & Harris, 2009; Eberly et al., 2001, Grunert O’Brien et al., 2008; Robb, 2012).

Blumberg and Pontiggia (2011) and Cullen and Harris (2009) relate that syllabi can indicate whether a course is teacher-centered or learner-centered. This aspect is important for instructors seeking to transition to more LC approaches. In their exploratory study, Davis and Schrader (2009) evaluated students and faculty perceptions of important information for inclusion in course syllabi. This aspect is important for faculty so they can develop a syllabus that is clear and best meets the needs of students.

Grunert O’Brien et al. (2008) offer that the syllabus plays an important role in relating the purpose and nature of courses towards promoting student development. Grunert O’Brien et al. (2008) relate the “syllabus represents a significant point of interaction [that if] thoughtfully

prepared...will demonstrate the interplay of [faculty] understanding of students needs and interests, [faculty] beliefs and assumptions about the nature of learning and education, and [faculty] values and interests concerning course content and structure” (p. xiv). Lastly, in the article, *The Learner-Centered Syllabus*, Robb (2012) offers a brief explanation of the components of a learner-centered syllabus as noted in Diamond’s (1997) text, *The Course Syllabus a Learning-Centered Approach*. According to Diamond (as cited in Robb, 2012), the essential components include (1) denoting responsibilities of the faculty and student,(2) relating course goals, (3) presenting how evaluations will be performed and what criterions they are based upon, (4) providing information about course layout and policies, (5) discussing how communication will transpire, and (6) giving access to course resources. Robb (2012) offers this approach may be used “when developing an environment that supports continued adult learning” (p. 490). Robb (2012) relates that “[t]he course syllabus is the fundamental place to start [as the] course syllabus provides the framework for the learning environment” (p. 490). These studies point to the importance of the syllabus and how study of this document may offer benefits in designing the learning process.

Sample

The sample for this study will include didactic course syllabi from public institutions having Bachelors of Science in Nursing programs in the State of Texas, United States of America. The sample will be a purposeful sample. Syllabi will be collected from didactic courses from each nursing program. The focus will be on didactic course syllabi as opposed to clinical course syllabi because on the nature of the differing classroom environments. Clinical courses syllabi tend to encourage hands-on practice with application of content.

This particular sample of document, the syllabus, is chosen due to access and availability. In 2009, the State of Texas in passing Texas House Bill 2504 required higher education institutions to publish syllabi for public access on their respective institutional websites. The legislative requirement entitled Sec. 51.974 requires access to specific course information in the syllabus including explanations of major course requirements, assignments and exams, suggested readings, and a depiction of the subject matter included in lectures or discussions. (<http://www.statutes.legis.state.tx.us/Docs/ED/htm/ED.51.htm#51.974>).

The course syllabi from each institution for evaluation will be grouped and labeled according to type of class. The following courses are common to most nursing programs and will be the ones under investigation in this research project. i.e. (1) Fundamentals of Nursing / Introduction to Nursing, (2) Adult Health / Common Concepts Nursing I, (3) Adult Health / Complex Concepts Nursing II, (4) Obstetric Nursing, (5) Pediatric Nursing, (6) Obstetric and Pediatric Nursing combination course, (7) Psychiatric / Mental Health Nursing, (8) Community / Public Health Nursing, (9) Nursing Pharmacology, (10) Management / Leadership Nursing, (11) Nursing Pathophysiology, and (12) Geriatric Nursing. A decision was made to not include elective courses as they often differ among schools and may not easily articulate.

Source of Sample Syllabi

At present there are 43 approved baccalaureate degree nursing programs in Texas (Texas Board of Nursing [BON], 2013). Of the 43 programs, 27 are housed in public institutions. Of these 27 programs, 21 are fully approved. Five have initial approval as a BSN program by the BON. The five programs having initial approval status, meaning they are in initial program approval phase with the Texas BON, will be excluded based on basis that they are just starting and may not have developed all the courses and associated syllabi denoted in their curriculum.

The remaining one program having full approval as a BSN program by the BON is an online RN-to-BSN program. This will allow potential evaluation of 21 programs.

For this study, two groups will be used for comparison. The first group includes (1) nine programs which offer nursing degrees including the Bachelors, Masters, and Doctorate in Nursing Practice or Doctor of Philosophy, and the second group includes (2) thirteen programs which offer only Bachelors and Masters Degrees in Nursing. The difference is based on whether a nursing department or program offers a doctoral program or not. This decision was made after initial review of the Carnegie Foundation for the Advancement of Teaching Basic Classification Categories (<http://classifications.carnegiefoundation.org/descriptions/basic.php>) and a decision to have larger group sizes for comparison. For reference, the Carnegie categories are as follows: (1) Associate's Colleges, (2) Doctorate-granting Universities, (3) Master's Colleges and Universities, (4) Baccalaureate Colleges, (5) Special Focus Institutions: Medical School or Medical Centers, and (6) Tribal Colleges. (<http://classifications.carnegiefoundation.org/descriptions/basic.php>).

Data Collection

A single stage sampling procedure was used. Syllabi were accessed via an internet search of the sample of 21 public BSN programs in Texas. To accomplish this, names of the respective public colleges and universities having BSN programs were typed in the search engine to access the syllabi. Syllabi from the nursing programs were downloaded in to a file on the researcher's external hard drive device and a separate file was kept for each institution. Specific BSN programs were labeled and identified as units A through U. A unit is defined as a single nursing program. Only this author and the committee chair are privileged to which unit corresponds to specific institutions. All others were blinded to the links of the school name to unit identifier.

The instrument applied to the sample syllabi in this research project was the LED-RS (see appendix A) created by the study author. This rubric is a specifically developed tool for assessing syllabi for the propensity towards use learning environment design principles (Bransford et al., 2000). This tool assesses for the presence of the design principles learner-centeredness, knowledge-centeredness, community-centeredness, and assessment-centeredness as articulated by Bransford and colleagues (2000) of the NRC. The various components of this rubric will be discussed in Chapter four of this dissertation.

Research Design

The research design has three phases as follows: (1) Rubric Development, (2) Instrument Validity and Reliability Analysis, and a (3) Structured Record Review of Nursing Syllabi. These phases will be discussed below.

Phase One: Rubric Development

The first phase of the project entails the development of the LED-RS using the NRC framework on LED perspectives (Bransford et al., 2000) as a guide. Rubric development employed the Stevens and Levi (2005) “Four Key Stages in Constructing a Rubric” (p. 29) method. These key stages include: (1) Reflecting; (2) Listing; (3) Grouping and Labeling; and (4) Application (Stevens & Levi, 2005). During the reflecting stage, contemplation occurs upon what one wants the rubric to be about, what topics to include, and what the expectations will be. During the listing stage, one focuses on the specific features and the objectives for the rubric. During the grouping and labeling stage, one organizes the results of the reflections in the first and second stages and groups expectations together into the rubric dimensions. Finally, in the application stage, one applies the dimensions and descriptions from the grouping and labeling

stage to the final rubric form. The development process for of this rubric is detailed next and includes a discussion on the validity and reliability analysis process for this instrument.

Phase Two: Instrument Validity and Reliability Analysis

This phase of the project entails an analytic approach to analysis of the survey instrument i.e. rubric, to establish validity and reliability of the instrument. The purpose of a “survey instrument is to collect meaningful data” (p. 4); therefore, to ensure accuracy, analysis of the survey for validity and reliability must occur (Litwin, 2003). Validity, in the case of a survey instrument, is the determination of how well the instrument measures what is intended to be measured (Litwin, 2003). Reliability “is a statistical measure of the reproducibility or stability of the data gathered by a survey instrument” (Litwin, 2003, p. 6). The project plan is to analyze for these two concepts.

Phase two has three steps as follows: (1) Evaluation for face validity of the instrument; (2) Evaluation for content validity of the instrument; (3) Pilot testing of instrument with analysis of interrater (inter-observer) reliability. The rubric development and validity and reliability testing of the instrument will be reported in Chapter 4 of the dissertation.

Step one. The first step of phase two is to evaluate for face validity of the instrument. “Face validity is based on a cursory review of items by untrained judges” (Litwin, 2003, p. 32). Face validity is a “casual measure of survey accuracy, usually assessed informally by nonexperts” (Litwin, 2003, p. 84). In the case of the instrument i.e. the LED-RS, the untrained judge would be someone unfamiliar with the NRC framework (Bransford et al., 2000) but familiar with rubrics. This step entails evaluation of each of the content areas of the rubric for appropriateness of statements by this individual.

Step two. The second step entails evaluation for content validity. Content validity is “a measure of survey accuracy that involves formal review by individuals that are experts in the subject matter of the survey” (Litwin, 2003, p. 84). In this step, several individuals who are familiar with the NRC framework (Bransford et al., 2000) were asked to evaluate the rubric for relevance of each content area and to comment on uniqueness of cells in each content domain. These individuals were also asked to report whether the cells in the rows along the columns show a progressive nature from “0” to “1” to “2” to “3.” This analytic approach to the validity process is felt to strengthen the overall validity of the instrument.

Step three. The third step of Phase Two entails pilot testing of the instrument with analysis for interrater reliability. Two raters, the author and a second rater, will evaluate ten syllabi from courses using the rubric and then repeat this action on 10 additional syllabi from courses to make sure the rubric shows stability i.e. interrater reliability. The courses to be used in this step are nursing elective courses. Elective courses are specifically being used to maintain independence from the courses being tested. Scores will be entered into a Microsoft Excel® spreadsheet for each of the 14 content areas of the rubric for each syllabus. The sample of nursing elective course syllabi will be collected from the selection of public BSN programs in Texas following the same process as noted in the Sample section. Copies of syllabi will be distributed to the second rater via mail.

The second part of this step entails statistical analysis for interrater reliability between two raters. Combined average measures of all content items (CI) and individual CI measures will be obtained from scores using the rubric. Combined average measures of all item scores from the index will offer an overall indication of learning-centeredness. To help identify specific areas where a syllabus needs addressing an average will be taken on each item. Analysis will include

solving for Pearson Correlation Coefficient (Hinkle, Wiersma, & Jurs, 2003) to establish interrater reliability. Establishing interrater reliability is important because this “provides a measure of how well two or more evaluators agree in their assessment of a variable” (Litwin, 2003, p. 26).

Concurrent validity is a measuring of survey accuracy involving comparison of the survey to other similar tests (Litwin, 2003). Review of literature on LED does not reveal a similar instrument for review. The two instruments created for syllabus evaluation by Blumberg and Pontiggia (2011) and Cullen and Harris (2009), that helped generate the idea for design of the rubric in this study, are helpful for identifying whether a teacher is more teacher-centered or learner-centered based on syllabus components, but not for comparison purposes for concurrent validity. It is felt by this author that concurrent validity cannot be measured at this time.

Phase Three: Structured Record Review of Nursing Syllabi

The third phase of the project entails the structured record review of nursing syllabi. Phase three has four steps as follows: (1) Collection of syllabi as noted in the Sample section of the methodology chapter; (2) Scoring of sample syllabi by two raters; (3) Determining internal consistency of the instrument; (4) Evaluation of data to answer the four research questions. The results from the structured record review of nursing syllabi will be discussed in Chapter 5 of this dissertation.

Step one. The first step is to collect syllabi. A cross-sectional sample of didactic course syllabi from BSN programs was collected at one point in time as noted in the Sample section of this chapter. Syllabi were obtained from each school unit congruent with the courses previously mentioned in the Sample section.

Step two. The second step entailed scoring of sample syllabi by two raters. Each rater scored at least 60 % of syllabi. This procedure ensures at least 20% of syllabi from each school unit will be scored by both raters. This will further allow for analysis for interrater reliability as well. Numeric data were entered into a Statistical Package for the Social Sciences (SPSS®) Data Set by two raters as noted in the next section. To account for maturation of each of the two raters during the process, courses will be presented in an orderly fashion. For example, all pharmacology courses will be evaluated first. Next, all pathophysiology courses will be evaluated. This process will proceed in this fashion until all course syllabi are scored by both raters.

A SPSS® Data Set was developed to allow for entering of data regarding the type of academic institution, the lead faculty degree, the type of course, and scores for each of the 14 content areas from the LED-RS.

In the first column, identifiers for the type of academic institution were denoted i.e. master's institution or doctoral institution. Master's institutions will receive a "1." Doctoral institutions will receive a "2."

In the second column, identifiers for the faculty degree will be entered for the lead instructor of the course as noted on the syllabus. A Doctor of Nursing Practice (DNP) will receive a "1." A Doctor of Philosophy (PhD) will receive a "2." A Doctor of Education (EdD) will receive a "3." A Master of Science of Nursing (MSN) will receive a "4." Faculty member with an unlisted degree will receive a "5." Faculty member with a non-nursing degree will receive a "6." If no primary instructor is noted, then that will receive a "7."

In the third column identifiers will be entered for the 11 courses. The courses from each institution will be grouped and labeled according to type of class. Fundamentals of Nursing /

Introduction to Nursing will receive a “1.” Adult Health / Common Concepts Nursing I will receive a “2.” Adult Health / Complex Concepts Nursing II will receive a “3.” Obstetric Nursing will receive a “4.” Pediatric Nursing will receive a “5.” Obstetric and Pediatric Nursing combination course will receive a “6.” Mental Health Nursing will receive a “7.” Community / Public Health Nursing will receive an “8.” Nursing Pharmacology will receive a “9.” Management / Leadership Nursing will receive a “10.” Nursing Pathophysiology will receive an “11.” Geriatric Nursing will receive a “12.”

In the fourth column, scores for each of the 14 CIs of the LED-RS will be entered in the following manner: “1” for minimal propensity / unacceptable with minimal evidence of components for that content area; “2” for moderate propensity / acceptable with moderate evidence of components for that content area; “3” for high propensity / acceptable with maximum evidence of components for that content area.

Step three. The third step in Phase Three was to determine internal consistency of the instrument. This will be further detailed in the Data Analysis section below.

Step four. The fourth step of this phase entailed analysis of the data to answer the four research questions. The next section will detail the data analysis procedures.

Data Analysis

Data analysis will occur during the second and third phases of this project.

Phase Two: Instrument Validity and Reliability Analysis

A key aspect of the second phase of the project will be to analyze the scores from pilot testing of the LED-RS to establish reliability of the instrument. As previously mentioned two raters, the author and a second rater, evaluated syllabi from nursing courses using the rubric and

then repeated this action on additional syllabi from nursing courses to make sure the rubric showed stability i.e. interrater reliability.

Combined average measures of all CIs and individual CI measures were obtained from scores using the rubric. Combined average measures of all item scores from the index will offer an overall indication of learning-centeredness. To help identify specific areas where a syllabus needs addressing an average will be taken on each item. Analysis will include solving for Pearson Correlation Coefficient (Hinkle et al., 2003) to establish interrater reliability.

Phase Three: Structured Record Review of Nursing Syllabi

There are several key aspects of the third phase of the project which require data analysis. Score results obtained from the structured record review survey of nursing syllabi by the two raters will be used for this analysis.

RQ 1: To what overall extent do nursing didactic course syllabi reflect the propensity for being learning centered?

To answer the research question regarding what is overall extent that nursing didactic course syllabi reflect the propensity for being learning-centered, descriptive statistics will be generated. Analysis will entail descriptive and inferential differentiation. The grand means for each course and as a population will be represented.

Additionally, analysis will include determination for internal consistency of the rubric. To determine this, Coefficient Alpha, also known as Cronbach's alpha (Multon & Coleman, 2010) will be employed.

RQ 2: Is there a difference between nursing programs at Public Doctorate-granting Universities versus Public Master's-granting Colleges and Universities when nursing didactic course syllabi are evaluated for being learning centered?

To answer the question regarding whether there is a difference between nursing programs at Public Doctorate-granting Universities versus Master's Colleges and Universities when nursing didactic course syllabi are evaluated for being learning-centered, Analysis of Variance (ANOVA) will be applied to means of overall rubric scores and individual CI scores. Hinkle, Wiersma, & Jurs, (2003) and Wahed and Tang (2010) relate ANOVA is used to compare two groups. Analysis will entail descriptive and inferential differentiation.

RQ 3: Is there a difference between the faculty characteristic of degree held and propensity for nursing didactic courses being learning centered?

To answer the question regarding whether there is a difference between the faculty characteristic of degree held and propensity for nursing didactic courses being learning-centered, Multivariate Analysis of Variance (MANOVA) will be applied. MANOVA is used when “more than two groups of subjects are being compared on several different variables simultaneously” (Stevens, 2002, p. 208). Analysis will entail descriptive and inferential differentiation.

RQ 4: Are certain nursing didactic courses more learning centered than others?

To answer the question regarding whether certain nursing didactic courses more learning-centered than others, MANOVA will be applied to means of overall rubric scores and individual CI scores for each class. Analysis will entail descriptive and inferential differentiation.

CHAPTER IV

INSTRUMENT DEVELOPMENT

This chapter will address the derivation process of the various aspects of the Learning Environment Design Rubric for Syllabi (LED-RS) instrument. An initial discussion will provide rationales for use of a rubric as an appropriate model for this instrument. Following this, there will be sections including ones on the description of the instrument, the various rubric components, the layout of the instrument, and the scale and scoring procedures to be used. The final section will provide the result of validity and reliability of the LED-RS.

Rationale for Use of a Rubric

If a core principle of teaching is to promote learning, then it would seem prudent to have a method for providing the student clear expectations regarding assignments along with an expeditious means for faculty to assess those expectations to further guide students towards their learning needs. One such method or instrument faculty often employ is a rubric. The rationale for the use of the rubric in this study is twofold. First, the rubric can provide a way for faculty to evaluate their specific course regarding the propensity to follow course design. Second, the rubric can be a teaching method. One of the purposes of this research project is to conceptualize a rubric for syllabus evaluation based on the framework regarding the learning environment design principles of the NRC (Bransford et al., 2000). This section will outline historical and contemporary definitions, the components, and the benefits of rubrics. The Stevens and Levi (2005) method of rubric development will guide the development of the rubric in for this project.

Historical and Contemporary Definitions

Hanna and Smith (as cited in Truemper, 2004) relate the term “rubric” derives its origin from the “Latin phrase *rubrica terra* and refers to the early practices of using red soil to denote something of importance” (p. 562). The definition of “rubric” is as follows:

\`rū-brik, - ,brik\ *noun* 1. *a* : an authoritative rule; *especially*: a rule for conduct of a liturgical service *b (1)*: name, title; *specifically*: the title of a statute *(2)*: something under which a thing is classed: category <the sensations falling under the general *rubric*, “pressure” — F. A. Geldard> *c* : an explanatory or introductory commentary: gloss; *specifically*: an editorial interpolation; 2: a heading of a part of a book or manuscript done or underlined in a color (as red) different from the rest; 3: an established rule, tradition, or custom; 4: a guide listing specific criteria for grading or scoring academic papers, projects, or tests (*Merriam-Webster’s Online Dictionary*, 2012).

The modern definition of a rubric is a tool which delineates acceptable and unacceptable responses to various components of assignments and displays requirements in matrix-form which assists with expeditious scoring of the assignment (Huba & Freed, 2000; Truemper, 2004; Stevens & Levi, 2005; Allen & Tanner, 2006; Brown, 2008; Bonnel, 2009). The descriptions of the variable responses offers an avenue for the teacher to delineate what needs exploring in the assignment and the extent of expectation or standard denoting mastery of the assignment (Allen & Tanner, 2006).

Components of Rubrics

According to Stevens and Levi (2005), most rubrics include four basic components. The first component is the “task description” (p. 5). A title and description of the assignment is furnished in this section. This section presents what the student will do in the assignment.

Examples may include writing an annotated bibliography, developing a portfolio, or teaching on a particular topic. The second component of a rubric is “a scale of some sort (levels of achievement, possibly in the form of grades)” (Stevens & Levi, 2005, pp. 5-6). The scale describes the gradations at each level of achievement towards the task. The scale often takes the form of levels of mastery such as “superlative,” “proficient,” and “developing.” The third component of a rubric entails “the dimensions of the assignment (a breakdown of the skills/knowledge involved in the assignment)” (Stevens & Levi, 2005, p. 6). In this section the instructor delineates various components comprising assignments. Each dimension should relate to the assignment and reflect the knowledge/skills needed to complete the assignment. For example, the knowledge/skills students will use in a writing assignment may include grammar, sentence structure, argument development, evidentiary support, and formatting. The fourth component of a rubric includes descriptions of the dimensions. Here instructors need to skillfully delineate the composition of each dimension along the level of the scale (Stevens & Levi, 2005). Continuing with the writing assignment example, a “developing” level may state that there are multiple mistakes in grammar and sentence structure, a “proficient” level delineation may state that the grammar and sentence structure are mostly accurate, whereas a “superlative” level may state that grammar and sentence structure are accurate. Rubrics that are thoughtfully prepared offer many benefits to students and instructors striving to assist students along their learning trajectory.

Benefits of Rubrics

The benefits to developing and using rubrics are numerous. According to Huba and Freed (2000), one of the primary aims of skillfully prepared rubrics is that they can foster the education of students. Six benefits of engaging students in rubric development and use of rubrics in class

assignments include (a) revealing the standards within a specific field, (b) informing students regarding the merits of varying levels of performance, thereby offering a point of reference for ongoing and future work and revision, (c) involving students in deciding course standards thereby helping them learn course expectations, (d) helping students develop regard for other learners as important participants in the education process, (e) increasing communication skills by encouraging dialogue with peer and faculty, and (f) helping increase understanding of peer perspective regarding work and performance thereby enlightening students to others opinions (Huba and Freed, 2000). Stevens and Levi (2005) list several benefits to students in rubric use including (a) receiving quick feedback on assignments, (b) helping students to learn how to provide comprehensive responses, (c) fostering analytical analysis, and (d) encouraging dialog with peers (Stevens & Levi, 2005). Andrade (as cited in Truemper, 2004) relates that rubrics help students glean clearer understanding of course expectations while Truemper (2004) adds that rubrics help students understand course grading procedures.

A second aim of rubric development and use is the benefit to faculty (Huba & Freed, 2000). Using rubrics can cut down on the time one spends when grading assignments (Bonnell, 2009; Stevens & Levi, 2005) and can assist instructors to become more reflective of their teaching and learning design practices through development and analysis of the various rubrics alignment with professional expectations (Allen & Tanner, 2006). Student comments regarding unclear aspects of rubrics can help during the revision process to improve clarity in rubrics (Huba & Freed, 2000). In addition to rubrics offering instructors direction for grading and increasing reliability among numerous graders (Bonnell, 2009), sharing rubrics with other faculty presents collaborative opportunities to improve on current rubrics (Huba & Freed, 2000). In the same vein, sharing rubrics and ideas among faculty and having those ideas show up in rubrics in

multiple classes “sends a strong, coherent message to students about the type of quality the professors expect in student work” (Huba & Freed, 2000, p. 173). Lastly, rubrics are helpful for informing the public of specific “student learning outcomes and standards” (Huba & Freed, 2000, p. 173). Stevens and Levi (2005) relate that rubrics can help faculty hone their pedagogical practices and rectifying potential ambiguous educational experiences of the student body.

Types of Rubrics

Examples of rubrics can be found in abundance if one merely performs an internet search. Most examples of rubrics though can be classified into two basic types: analytical and holistic (Truemper, 2004; Allen & Tanner, 2006; Brown, 2008). Stevens and Levi (2006) refer to these types of rubrics as “Three-to-Five-Level Rubrics” (p. 39) and “Scoring Guide Rubrics” (p. 38) respectively. Analytical or “Three-to-Five-Level” (Stevens & Levi, 2005, p. 39) rubrics differentiate criteria by degrees of quality among the levels of mastery ascribed to a specific task (Allen & Tanner, 2006). For example, “superlative” level delineation may require “there are no grammatical or spelling errors detracting from readability; technical word choice is appropriate,” whereas a “proficient” level may require “there are minor grammatical or spelling errors present, but these do not detract from the overall readability; technical word choice has one or two errors present.” Analytical style rubrics allow for detailed feedback and consistency in scoring among multiple graders but, one disadvantage is they take more time when scoring (Penn State University, Schreyer Institute for Teaching Excellence, 2007).

Holistic or “Scoring Guide Rubrics” (Stevens & Levi, 2005, p. 38) rubrics are different from analytical rubrics in that they list only one criterion set: the highest level of mastery (Allen & Tanner, 2006). Instructors need to make notes about student performance and assign a score to the work. An example of this might be the incorporation of grammar, spelling, readability, and

technical word choices under a common heading such as “Writing Style.” Truemper (2004) offers that holistic rubrics may be better suited to assignments where there is difficulty in separating specific parts such as in a speech where the scoring may represent an overall achievement of the desired outcome. A holistic rubric allows for quick scoring and an overview of a student’s achievement but, does not offer details of specific student performance (Penn State University, Schreyer Institute for Teaching Excellence, 2007).

In summary, rubrics are instruments which if carefully constructed can offer individuals clear learning expectations that are pivotal for fostering optimal learning. Well-constructed rubrics can provide students with examples of authentic professional experiences and expectations guiding them towards awareness of learning needs and readying them for self-driven lifelong learning pursuits. A purpose of this research project is to offer faculty a tool to evaluate syllabi for learning design principles. Using the rubric for learning environment design should help faculty not only evaluate current syllabi, but learn how to effectively construct a syllabus designed for optimal learning.

Description of the Instrument

This section will describe the components of the rubric. Discussion will include the title, topic domains, and specific CIs. Explanation of the topic domains and CIs will be grouped for continuity of discussion.

The title of the instrument is the “Learning Environment Design Rubric for Syllabi” or LED-RS. The choice for this title is that the rubric will evaluate for evidence of LED throughout various aspects of a syllabus.

Looking at the syllabus through the through the various lenses of the four perspectives of LED (Bransford et al., 2000), specific topic domains and CIs within each of the domains were

envisioned, listed, and grouped and labeled. There are four broad topic domains with each being related a specific LED perspective (Bransford et al., 2000). The domain names include the learner-centered topic domain, the knowledge-centered topic domain, the assessment-centered topic domain, and community-centered topic domain. Each of the topic domains is further separated into specific CIs. Each of these CIs defines the components related to the main topic domain.

Learner-Centered Topic Domain

The learner-centered topic domain relates to learning environments that are learner-centered. In these environments, students' backgrounds including culture, prior knowledge, and their strengths and needs in learning should be recognized. The learner-centered topic domain has four CIs including (1) Cultural Basis Acknowledgment Statement, (2) Conceptual and Cultural Knowledge Building, (3) Course Goals / Outcomes Statement and, (4) Teaching Practices. When reflecting on how each of these CIs can be represented in the syllabus specific aspects for a syllabus come to mind.

To address Cultural Basis of the course several acknowledgment statements need to be present. These include the university course description, a statement noting links between the course and its outcomes to the broader mission and outcomes of the program, college, and university, and a statement that teaching practices strive to be culturally responsive, appropriate, compatible, and relevant to students, i. e. the statement relates to seeking to identify student's cultural practices or ideas as a locus for beginning instruction for students to gain insight.

To address Conceptual and Cultural Knowledge Building, the syllabus needs to offer an in-depth statement regarding the importance of conceptual and cultural knowledge and understanding of topics, a description of the importance of conceptual and cultural knowledge

and understanding of topics, and should offer how class content and assessment will build upon previous knowledge and promote learning related to topic.

To address Course Goals / Outcomes there needs to be a statement present that discusses the Course Goals and Outcomes, appears clear and practical, and relates that a broad understanding of the subject matter including knowledge, skills, attitudes, and beliefs will be assessed.

To address Teaching Practices, the syllabus should present a list of teaching practices to be employed in the course and offers either a description of teaching practices or the purpose for each practice. All teaching practices presented are diagnostic rather than delimiting measurements i.e. they attempt to discover what students think in response to problems at hand. Lastly, the syllabus should explicitly state that the teaching practices will be useful for identifying and sensitively discussing student misconceptions, and providing further situations to extend student thinking thereby enabling students to readjust their previous ideas.

Knowledge-Centered Topic Domain

The knowledge-centered topic domain relates to learning environments that focus on “what is taught (information, subject matter), why it is taught (understanding), and what competence or mastery looks like” (Bransford et al., 2000, p. 24). These environments should strive to offer “the necessary depth of study, assessing student understanding rather than factual memory” (Bransford et al., 2000, p. 24) and as Brunner relates, “[takes] seriously the need to help students become knowledgeable by learning in ways that lead to understanding and subsequent transfer” (Bransford et al., 2000, p. 136). These environments need to engage metacognition, reflective practices to enhance learning. A central focus should be on “encourage[ing] doing with understanding,” (Bransford et al., 2000, p. 24). The knowledge-

centered topic domain has four CIs including (1) Need for Knowledge, (2) Metacognitive Practices and Sense-making, (3) Engagement and Doing, and (4) Competency and Mastery.

To address Need for Knowledge there needs to be evidence in the syllabus that Syllabus recognizes need for active learning in factual knowledge development; Relates that facts need to be connected and reinforced for understanding; Assignments and assessments are designed to promote the application of knowledge for deeper learning.

To address Metacognitive Practices and Sense-making, evidence of metacognitive practices are required. Activities are designed into the class such as reflection, post-assignment reflection, and / or self-evaluation. There is specific mention of the practice of reflection on instructor and/or peer feedback regarding assignments designed into the class as an activity to improve sense-making abilities. Lastly, an evaluation process is described.

To address Engagement and Doing, the syllabus needs to describe projects that require students to engage each other to solve problems both inside and outside of classroom settings. Problems which are dealt with appear to be real-world in nature and further encourage hands on doing with understanding. Projects are not merely task oriented as students are encouraged to bring additional knowledge to class through discussions. Creation of artifacts of learning (e.g. poster, paper, or oral presentations) is required.

To address Competency and Mastery, the syllabus needs to make specific statements that assignments are designed to help students achieve competence or mastery through learning strategies such as exploration, explanation, and self-evaluate of progress. Further, the teaching and evaluation practices support this statement.

Assessment-Centered Topic Domain

The assessment-centered topic domain relates to learning environments that are focused on assessing student knowledge. An important aspect of this domain is to make students' ideas and judgments visible (Bransford et al., 2000). This allows faculty to provide students with opportunities to see their own evolution, modify and develop their own reasoning, and receive remediation from teachers when necessary (Bransford et al., 2000). Another aspect of this domain is need for appraisal designed into instruction (Bransford et al., 2000). Formative and summative assessments are helpful in informing student and faculty where refinements may need to be made. The assessment-centered topic domain has three CIs including (1) Course Assignments, (2) Evaluations, and (2) Revisioning.

To address Course Assignments, the syllabus needs to provide details of each assignment with explanations of how each will foster the development of interpersonal skills in the mastery of course content. The statement needs to tie assignments to course learning objectives. Multiple types of assignments should be noted (e.g. quizzes, multiple choice tests, papers, presentations, etc.) and should include a blend individual and collaborative work. Finally, the statement should detail how the assignments allows the instructor to grasp the students' preconceptions, a way to guide students in learning

To address Evaluations, the syllabus needs to offer that formative and summative evaluations are designed into the course. Multiple assessments types need to be present for students and instructor to monitor progress and are related to practical problems in the field. Assessments should explicitly discuss where they are useful for indicating where inquiry and instruction should focus. Evaluations are noted as cumulative. Opportunity is provided to review

results of evaluations and/or for assignment feedback. Finally, students need to be informed that evaluating personal learning is a lifelong learning skill and not every assignment may be scored.

To address Revisioning the syllabus should encourage students to revise course assignments for feedback prior to receiving a final grade. The revisioning process provides opportunities to see personal evolution, modify and develop reasoning, and to receive remediation when needed.

Community-Centered Topic Domain

The community-centered topic domain relates to learning environments that are focused on the benefits of community interaction in learning for students. A community-centered approach to LED requires intent on part of the professor to develop “norms for the classroom and school, as well as connections to the outside world, [i.e. the broader community, and supports] core learning values” (Bransford et al., 2000, p. 25). If students are to identify their preconceptions about subject matter, explore pressing questions, and monitor their progress toward understanding, then the norms within the class must support their doing so. Teachers must design classrooms pursuits to help “students organize their work in ways that promote the kind of intellectual camaraderie and the attitudes toward learning that build a sense of community” (Bransford et al., 2000, p. 25). In this topic domain there are three CIs including (1) Class Culture / Norms, (2) Collaboration in Class Activities, and (3) Relational Learning.

To address Class Culture / Norms the syllabus should explicitly states that the class culture is based on the premise that students need to come to class having read assigned readings and prepared to engage in class discussions with the instructor and classmates. A specific statement needs to be present encouraging academic risk-taking. The students need to also be

able to identify that implicit in academic risk-taking is the expectation that not knowing all the facts is permissible and is not devalued.

To address Collaboration in Class Activities, the syllabus needs to offer a clear and specific statement that class activities are purposively organized in ways that promotes intellectual camaraderie and to develop attitudes that lean toward building a sense of community. Further, the syllabus requires students to assist one another to solve problems by building on each other's knowledge, asking questions to clarify explanations, and suggesting avenues that would move the group towards its goal. Cooperation and debate are required in the academic endeavor.

As for Relational Learning, a statement is present regarding the instructor's intent for students to relate theory to practice, how assignments are designed to help accomplish this, and how the assignments will relate to broader aspects of student's lives outside the classroom. Lastly, there is a statement indicating a relation to national standards.

Layout of Cells

The instrument is setup as a 4-Level rubric. This means there are four cells which follow each CI. These cells contain descriptions / statements regarding the content index. These descriptions / statements represent increasing levels of comprehensiveness ascribed to the specific CI. For example, in the learner-centered domain, the first content index is Cultural Basis Acknowledgement Statement. The first cell contains the following descriptions / statements, "The university course description is not present; No additional statement is noted which links the course and its outcomes to the broader mission and outcomes of the program, college, and university; No additional statement is noted regarding how teaching practices strive to be culturally responsive, appropriate, compatible, and relevant to students."

The second cell contains the following descriptions / statements, “The university course description is present, but no additional statement is noted which links the course and its outcomes to the broader mission and outcomes of the program, college, and university and no additional statement is noted regarding how teaching practices strive to be culturally responsive, appropriate, compatible, and relevant to students.”

The third cell contains the following descriptions / statements, “The university course description is present and an additional statement is provided that links the course to the broader curriculum, mission, and outcomes of the program, college and university, but no additional statement is noted regarding how teaching practices strive to be culturally responsive, appropriate, compatible, and relevant to students.”

Finally, the fourth cell contains the following descriptions / statements, “The university course description is present, an additional statement is noted which links the course and its outcomes to the broader mission and outcomes of the program, college, and university, and an additional statement is present that the teaching practices strive to be culturally responsive, appropriate, compatible, and relevant to students, i. e. the statement relates to seeking to identify student’s cultural practices or ideas as a locus for beginning instruction for students to gain insight.” A progressive nature is notable through the cells. Appendix A contains the rubric for reference.

Scale and Scoring

When developing scoring rules for a new instrument one must decide how to evaluate the scale score (Litwin, 2003). For the LED-RS instrument each CI will have a choice of four scores to choose from. Specifically, one may assign a score of “0”, “1”, “2”, or “3” based on the propensity for the content area as noted being present by a rater in each cell along the column in

the syllabus. Receiving a point total of “0” in any CI equates to no propensity / unacceptable with no evidence of components for that content area. Receiving a point total of “1” in any CI equates to minimal propensity / unacceptable with minimal evidence of components for that content area. Receiving a point total of “2” in any CI equates to a moderate propensity / acceptable with moderate evidence of components for that content area. Receiving a point total of “3” in any CI equates to a high propensity / acceptable with maximum evidence of components for that content area.

Each CI has a potential of receiving 3 points. Adding all CIs together will equate to 42 points. Dividing the maximum points allowed by 14 will produce an overall score represented on a “0” to “3” scale and thereby an overall measure of learning-centeredness.

Validity and Reliability Analysis

The validity and reliability phases of the project entail analysis of the LED-RS to establish validity and reliability of the instrument. Validity is the determination of how well the instrument measures what is intended to be measured (Litwin, 2003). Reliability “is a statistical measure of the reproducibility or stability of the data gathered by a survey instrument” (Litwin, 2003, p. 6). These two concepts were analyzed and results are reported in the next sections.

The validity analysis entails an analytic approach involving two steps. The first step is to have the LED-RS evaluated for face validity. The second step is to have the LED-RS evaluated for content validity.

Step One

The first step is to evaluate for face validity of the instrument. “Face validity is based on a cursory review of items by untrained judges” (Litwin, 2003, p. 32). Face validity is a “casual measure of survey accuracy, usually assessed informally by nonexperts” (Litwin, 2003, p. 84). In

the case of the instrument i.e. the LED-RS, the untrained judge is someone unfamiliar with the NRC framework (Bransford et al., 2000) but familiar with rubrics. This step entails evaluation of each of the content areas of the rubric for appropriateness of statements by this individual.

In February 2014 this author asked Instructor A, a university faculty member who is familiar with rubric development, but not familiar with the NRC framework (Bransford et al., 2000), to review the LED-RS rubric for face validity. On that same day Instructor A and this author met to discuss whether rubric had logical flow e.g. all CIs were individually distinguishable from each other, all CIs appeared in an increasingly progressive and more complex nature from levels zero through three, made sense e.g. items were understandable, and that the rubric appeared usable for the intended purpose e.g. evaluating syllabi for the various CIs. The reviewer related that no changes were noticeably needed. After this discussion, the author moved to step two, evaluation for content validity, which is discussed in the next section.

Step Two

The second step entails evaluation for content validity. Content validity is “a measure of survey accuracy that involves formal review by individuals that are experts in the subject matter of the survey” (Litwin, 2003, p. 84). Several individuals who are familiar with the NRC framework (Bransford et al., 2000) were asked to evaluate the rubric for relevance of each content area and to comment on uniqueness of cells in each content domain. These individuals were also asked to report whether the cells in the rows along the columns show a progressive nature from “0” to “1” to “2” to “3.” This analytic approach to the validity process is felt to strengthen the overall validity of the LED-RS.

In March and April of 2014, this author asked by email four individuals, all college and university faculty members who are familiar with rubric development and the Learning Design

Perspectives Framework of the NRC (Bransford et al., 2000), to review the LED-RS rubric for content validity. All four individuals, Instructors B, C, D, and F agreed to review the rubric.

This author received emails from three individuals, Instructors B, C, and D, with attached rubric changes / suggestions. These suggestions were used to enhance and improve the content validity of the instrument. This author met with the fourth individual, Instructor F, in May 2014 to review suggestions for the LED-RS rubric. Final suggestions were made to make the rubric more clear and usable. After this discussion, the author moved to the reliability analysis of the LED-RS which is discussed in the next section.

Step Three

The reliability analysis entailed pilot testing of the LED-RS with analysis of interrater reliability. The plan was for two raters, the author and a second rater, to evaluate a total of 20 nursing elective course syllabi independently of each other using the LED-RS rubric. Elective courses were specifically being used to maintain independence from the courses being tested in this study. Scores were entered by the two raters into a SPSS® Data Set for each of the 14 content areas of the rubric for each syllabus. The sample syllabi were collected from the selection of public BSN programs in Texas following the same process as noted in the Sample section in Chapter 3. Copies of syllabi will be distributed to the second rater via mail.

The process included providing to the second rater the reliability syllabi, the LED-RS rubric, and the SPSS® Data Set file. The author and the second rater independently evaluated syllabus #1 and met via telephone to review how individual results correlated and whether changes needed to be made in the rubric to increase clarity. This process continued for each of the first five syllabi. After the review of the fifth syllabus results, the rubric was sent to content validity evaluator Instructor B who reviewed and approved of the final rubric make-up.

After receiving content validity approval, syllabi 6 through 10 were independently scored and raters reconvened to discuss results, use of rubric, and to entertain changes if necessary. No changes were suggested by either party. Next, syllabi 11 through 20 were scored independently and all scores were sent to the study author.

Results

The purpose for analysis in this section was to establish interrater reliability between two raters who used the LED-RS instrument while evaluating a selection of syllabi. All CIs were analyzed for average measures and standard deviations between the two raters. Results of means and standard deviations for raters on individual CIs are reported in Table 2. The frequencies of individual CIs are located in Appendix C.

Table 2

Table of Means and Standard Deviations of Rater Scores for Individual Content Items

Content Item	<i>M</i>			<i>SD</i>			<i>N</i>
	R1	R2	Overall	R1	R2	Overall	
CI 1 Cultural Basis Acknowledgment	1.1333	1.0000	1.0667	.3519	.0000	.2538	30
CI 2 Conceptual and Cultural Knowledge Bldg.	.0000	.2000	.1000	.0000	.5606	.4026	30
CI 3 Course Goals / Objectives	2.4000	2.2000	2.3000	.7368	.6761	.7022	30
CI 4 Teaching Practices	1.0000	.9333	.9667	1.0000	1.033	.9994	30
CI 5 Need for Knowledge	.0667	.2667	.1667	.2582	.7988	.5921	30
CI 6 Metacognitive Practices and Sense-making	.1333	.4667	.3000	.5164	.9904	.7944	30
CI 7 Engagement and Doing	2.0000	1.5333	1.7667	1.1339	1.1255	1.1351	30
CI 8 Competency and Mastery	.4000	.2000	.3000	1.0556	.7746	.9154	30
CI 9 Course Assignments	1.4667	1.6667	1.5667	.9904	.8165	.8976	30
CI 10 Evaluation	1.6000	1.7333	1.6667	.7368	.7037	.7112	30
CI 11 Revisioning	.0667	.2667	.1667	.2582	.4577	.3791	30
CI 12 Class Culture / Norms	.6000	.7333	.6667	.7368	1.0328	.8841	30
CI 13 Collaboration	.2667	.5333	.4000	.5936	.8338	.7240	30
CI 14 Contextual Learning	1.6667	1.4000	1.5333	1.2910	1.0556	1.1666	30
Total	.9143	.9381	.9262	1.0859	1.0264	1.0562	30

Note. R1 = Rater 1; R2 = Rater 2

A Pearson Correlation Coefficient was calculated to establish interrater reliability. The Pearson Correlation Coefficient was calculated by comparing results from items ($N = 210$). The correlation was found to be statistically significant, $r = .75$, $p < .01$, indicating a strong positive relationship between the two raters.

Summary

In summary, the LED-RS was developed using the learning environment design framework of the NRC (Bransford et al., 2000). The rubric was evaluated for face and content validity. The instrument was then used to evaluate a sample of nursing syllabi to establish reliability. Means and standard deviations for raters and answer frequencies for individual CIs were computed. The scores between the two raters were found to be highly correlated by Pearson Correlation Coefficient. The rubric appears stable and ready to be used in the study of test syllabi as proposed in this dissertation. In the next chapter, results of the analysis of the sample of test syllabi will be reported.

CHAPTER V

RESULTS

The purpose of this research project was two-fold. The first purpose was to conceptualize a rubric for syllabus evaluation based on the framework regarding the learning environment design principles of the National Research Council (Bransford et al., 2000). This was performed and reported on in Chapter IV of this dissertation. The second purpose of the study was to use this rubric, the LED-RS, to investigate the propensity of nursing syllabi for their overall reflection of LED principles by evaluating whether similarities and differences exist between syllabi originating from Public Doctorate-granting Universities versus Public Master's-granting Colleges and Universities. Chapter V will present results from investigation of the following research questions:

RQ 1: *To what overall extent do nursing didactic course syllabi reflect the propensity for being learning centered?*

RQ 2: *Is there a difference between nursing programs at Public Doctorate-granting Universities versus Public Master's-granting Colleges and Universities when nursing didactic course syllabi are evaluated for being learning centered?*

RQ 3: *Is there a difference between the faculty characteristic of degree held and propensity for nursing didactic courses being learning centered?*

RQ 4: *Are certain nursing didactic courses more learning centered than others?*

Research Question 1

To what overall extent do nursing didactic course syllabi reflect the propensity for being learning centered?

To answer RQ1, descriptive statistics were generated to evaluate the propensity for being learning-centered in the following areas: (1) Overall, (2) The Four Domains, and (3) The Individual CIs.

Overall

The grand mean for the sample was .8040 ($SD = .365$; $N = 94$), implying the sample as a whole reflects ‘minimal propensity’ for being learning centered.

The Four Domains

Descriptive statistics of the four domains were calculated by taking the average of all CIs within each domain. See Table 3 for overall means and standard deviations. The LC domain mean indicated ‘moderate propensity.’ The KC domain indicated ‘minimal propensity.’ The AC domain mean indicated ‘moderate propensity.’ The CC domain mean indicated ‘minimal propensity.’ Descriptions of the four domains can be located in Chapter IV pages 133-138.

Table 3

Table of Means and Standard Deviations for LED-RS Domains

Domains	<i>M</i>	<i>SD</i>	<i>N</i>
Learner-Centered	1.0027	.3712	94
Knowledge-Centered	.4229	.4973	94
Assessment-Centered	1.0248	.4155	94
Community-Centered	.8262	.6733	94

The Individual CIs

Descriptive statistics were calculated for each CI. Results indicated all items scoring at either the ‘moderate’ or ‘minimal’ propensity levels. See Table 4 for means and standard deviations for individual CIs. The items that indicated the highest of the ‘moderate’ propensity level included CI 3 Course Goals / Objectives ($M = 1.9149$) and CI 10 Evaluation ($M = 1.7447$). The items that indicated or lowest propensity included CI 11 Revisioning ($M = .0319$), CI 5 Need for Knowledge ($M = .0638$), and CI 2 Conceptual and Cultural Knowledge Building ($M = .117$). The frequencies for the answers on all individual CIs are located in Appendix D. Descriptions of CIs can be located in Chapter IV pages 133-138.

Table 4

Table of Means and Standard Deviations for Individual Content Items

Content Item	<i>M</i>	<i>SD</i>	<i>N</i>
CI 1 Cultural Basis Acknowledgment	1.0745	.3946	94
CI 2 Conceptual and Cultural Knowledge Building	.1170	.3232	94
CI 3 Course Goals / Objectives	1.9149	.6825	94
CI 4 Teaching Practices	.9043	.9398	94
CI 5 Need for Knowledge	.0638	.3827	94
CI 6 Metacognitive Practices and Sense-making	.2872	.7277	94
CI 7 Engagement and Doing	1.1277	1.2025	94
CI 8 Competency and Mastery	.2128	.6537	94
CI 9 Course Assignments	1.2979	.8010	94
CI 10 Evaluation	1.7447	.6382	94
CI 11 Revisioning	.0319	.2296	94
CI 12 Class Culture / Norms	.3191	.5905	94
CI 13 Collaboration	.6596	.9339	94
CI 14 Contextual Learning	1.5000	1.1240	94

Research Question 2

Is there a difference between nursing programs at Public Doctorate-granting Universities versus Public Master's-granting Colleges and Universities when nursing didactic course syllabi are evaluated for being learning centered?

The evaluation of RQ 2 included assessing for differences between institution types in the following areas: (1) Overall, (2) The Four Domains, and (3) The Individual CIs. An analysis of variance was initially planned to determine whether there was a difference between dependent variable (the LED-RS scores of nursing didactic course syllabi evaluated for being learning centered in the three areas addressed) and the independent variables (nursing programs identified as Public Doctorate-granting Universities and Public Master's-granting Colleges and Universities).

Overall

Due to the finding on the Shapiro-Wilk test that groups were not normally distributed--Master's colleges and universities ($.006 < .01$) violated the assumption and Doctoral universities ($.033 > .01$) did not violate the assumption--nonparametric tests were employed. The Independent Samples Kruskal-Wallis nonparametric test, at $\alpha = .05$, was conducted and found no statistical significance in the LED-RS scores of nursing didactic course syllabi between the two groups, $X^2(1, N = 94) = 2.579, p = .108$, with a mean rank score of 41.51 for Public Doctorate-granting Universities and a mean rank score of 50.89 for Public Master's-granting Colleges and Universities.

The Four Domains

The second aspect of the analysis explored whether differences existed within the different domains between Public Doctorate-granting Universities and Public Master's-granting

Colleges and Universities. Due to the Shapiro-Wilk normality assumption being violated, Independent Samples Kruskal-Wallis nonparametric tests were employed. See Appendix E for Shapiro-Wilk scores.

LC domain. An Independent Samples Kruskal-Wallis nonparametric test, at $\alpha = .05$, was conducted on data for the LC Domain. Analysis found a statistically significant difference existed in the LED-RS scores of nursing didactic course syllabi between the two groups, $X^2(1, N = 94) = 6.369, p = .012$. The mean rank score of 38.28 for Public Doctorate-granting Universities was statistically significantly lower than the mean rank score of 52.73 for Public Master's-granting Colleges and Universities. Based on this analysis, Public Master's-granting Colleges and Universities with a mean of 1.0708 (99% CI = .9452 to 1.1965) had more propensity for being learner-centered than Public Doctorate-granting Universities having a mean of .8824 (99% CI = .7160 to 1.0487).

KC domain. An Independent Samples Kruskal-Wallis nonparametric test, at $\alpha = .05$, was conducted on data for the KC Domain. Analysis did not find a statistically significant difference in the LED-RS scores of nursing didactic course syllabi between the two groups, $X^2(1, N = 94) = .109, p = .741$. The mean rank score of 46.31 for Public Doctorate-granting Universities was not statistically significant from the mean rank score of 48.18 for Public Master's-granting Colleges and Universities.

AC domain. An Independent Samples Kruskal-Wallis nonparametric test, at $\alpha = .05$, was conducted on data for the AC Domain. Analysis did not find a statistically significant difference in the LED-RS scores of nursing didactic course syllabi between the two groups, $X^2(1, N = 94) = .037, p = .848$. The mean rank score of 46.81 for Public Doctorate-granting Universities was not

statistically significant from the mean rank score of 47.89 for Public Master's-granting Colleges and Universities.

CC domain. An Independent Samples Kruskal-Wallis nonparametric test, at $\alpha = .05$, was conducted on data for the CC Domain. Analysis did not find a statistically significant difference in the LED-RS scores of nursing didactic course syllabi between the two groups, $X^2(1, N = 94) = 1.648, p = .199$. The mean rank score of 42.78 for Public Doctorate-granting Universities was not statistically significant from the mean rank score of 50.18 for Public Master's-granting Colleges and Universities.

The Individual CIs

A third aspect of the analysis explored whether differences existed within the different CIs between Public Doctorate-granting Universities and Public Master's-granting Colleges and Universities. Due to the Shapiro-Wilk normality assumption being violated, Independent Samples Kruskal-Wallis nonparametric tests were employed. See Appendix F for Shapiro-Wilk normality scores for LED-RS Domains by CI.

CI 1 - Cultural basis acknowledgment. An Independent Samples Kruskal-Wallis nonparametric test, at $\alpha = .05$, was conducted on data for CI 1. Analysis found no statistical difference on CI 1 scores between the two groups, $X^2(1, N = 94) = .201, p = .654$, with a mean rank score of 48.47 for Public Doctorate-granting Universities and a mean rank score of 46.95 for Public Master's-granting Colleges and Universities.

CI 2 - Conceptual and cultural knowledge building. An Independent Samples Kruskal-Wallis nonparametric test, at $\alpha = .05$, was conducted on data for CI 2. Analysis found no statistical difference on CI 2 scores between the two groups, $X^2(1, N = 94) = 1.727, p = .189$,

with a mean rank score of 44.76 for Public Doctorate-granting Universities and a mean rank score of 49.05 for Public Master's-granting Colleges and Universities.

CI 3 - Course goals / objectives. An Independent Samples Kruskal-Wallis nonparametric test, at $\alpha = .05$, was conducted on data for CI 3. Analysis found no statistical difference on CI 3 scores between the two groups, $X^2(1, N = 94) = 2.442, p = .118$, with a mean rank score of 42.21 for Public Doctorate-granting Universities and a mean rank score of 50.50 for Public Master's-granting Colleges and Universities.

CI 4 - Teaching practices. An Independent Samples Kruskal-Wallis nonparametric test, at $\alpha = .05$, was conducted on data for CI 4. Analysis found a statistically significant difference on CI 4 scores between the two groups, $X^2(1, N = 94) = 5.492, p = .019$, with a mean rank score of 39.40 for Public Doctorate-granting Universities and a mean rank score of 52.09 for Public Master's-granting Colleges and Universities. Based on this analysis, Public Master's-granting Colleges and Universities with a mean of 1.0667 (99% CI = .7512 to 1.382) had more propensity for using more learning practices than Public Doctorate-granting Universities having a mean of .6176 (99% CI = .1856 to 1.0497).

CI 5 - Need for knowledge. An Independent Samples Kruskal-Wallis nonparametric test, at $\alpha = .05$, was conducted on data for CI 5. Analysis found no statistical difference on CI 5 scores between the two groups, $X^2(1, N = 94) = .011, p = .918$, with a mean rank score of 47.38 for Public Doctorate-granting Universities and a mean rank score of 47.57 for Public Master's-granting Colleges and Universities.

CI 6 - Metacognitive practices and sense-making. An Independent Samples Kruskal-Wallis nonparametric test, at $\alpha = .05$, was conducted on data for CI 6. Analysis found no statistical difference on CI 6 scores between the two groups, $X^2(1, N = 94) = .719, p = .396$, with

a mean rank score of 49.40 for Public Doctorate-granting Universities and a mean rank score of 46.43 for Public Master's-granting Colleges and Universities.

CI 7 - Engagement and doing. An Independent Samples Kruskal-Wallis nonparametric test, at $\alpha = .05$, was conducted on data for CI 7. Analysis found no statistical difference on CI 7 scores between the two groups, $X^2(1, N = 94) = .040, p = .842$, with a mean rank score of 46.79 for Public Doctorate-granting Universities and a mean rank score of 47.90 for Public Master's-granting Colleges and Universities.

CI 8 - Competency and mastery. An Independent Samples Kruskal-Wallis nonparametric test, at $\alpha = .05$, was conducted on data for CI 8. Analysis found no statistical difference on CI 8 scores between the two groups, $X^2(1, N = 94) = 3.274, p = .070$, with a mean rank score of 43.88 for Public Doctorate-granting Universities and a mean rank score of 49.55 for Public Master's-granting Colleges and Universities.

CI 9 - Course assignments. An Independent Samples Kruskal-Wallis nonparametric test, at $\alpha = .05$, was conducted on data for CI 9. Analysis found no statistical difference on CI 9 scores between the two groups, $X^2(1, N = 94) = .845, p = .358$, with a mean rank score of 44.29 for Public Doctorate-granting Universities and a mean rank score of 49.32 for Public Master's-granting Colleges and Universities.

CI 10 - Evaluation. An Independent Samples Kruskal-Wallis nonparametric test, at $\alpha = .05$, was conducted on data for CI 10. Analysis found no statistical difference on CI 10 scores between the two groups, $X^2(1, N = 94) = .315, p = .575$, with a mean rank score of 49.15 for Public Doctorate-granting Universities and a mean rank score of 46.57 for Public Master's-granting Colleges and Universities.

CI 11 - Revisioning. An Independent Samples Kruskal-Wallis nonparametric test, at $\alpha = .05$, was conducted on data for CI 11. Analysis found no statistical difference on CI 11 scores between the two groups, $X^2(1, N = 94) = .115, p = .694$, with a mean rank score of 47.87 for Public Doctorate-granting Universities and a mean rank score of 47.29 for Public Master's-granting Colleges and Universities.

CI 12 - Class culture / norms. An Independent Samples Kruskal-Wallis nonparametric test, at $\alpha = .05$, was conducted on data for CI 12. Analysis found no statistical difference on CI 12 scores between the two groups, $X^2(1, N = 94) = 1.068, p = .301$, with a mean rank score of 50.44 for Public Doctorate-granting Universities and a mean rank score of 45.83 for Public Master's-granting Colleges and Universities.

CI 13 – Collaboration. An Independent Samples Kruskal-Wallis nonparametric test, at $\alpha = .05$, was conducted on data for CI 4. Analysis found a statistically significant difference on CI 4 scores between the two groups, $X^2(1, N = 94) = 5.227, p = .022$, with a mean rank score of 40.24 for Public Doctorate-granting Universities and a mean rank score of 51.62 for Public Master's-granting Colleges and Universities. Based on this analysis, Public Master's-granting Colleges and Universities with a mean of .8167 (99% CI = .4849 to 1.1484) had more propensity for using more collaboration than Public Doctorate-granting Universities having a mean of .3824 (99% CI = -.0006 to .7653).

CI 14 - Contextual learning. An Independent Samples Kruskal-Wallis nonparametric test, at $\alpha = .05$, was conducted on data for CI 14. Analysis found no statistical difference on CI 14 scores between the two groups, $X^2(1, N = 94) = .663, p = .415$, with a mean rank score of 44.56 for Public Doctorate-granting Universities and a mean rank score of 49.17 for Public Master's-granting Colleges and Universities.

Research Question 3

Is there a difference between the faculty characteristic of degree held and propensity for nursing didactic courses being learning centered?

Research Question 3 assessed whether the faculty characteristic of degree held made a difference or not regarding propensity for nursing didactic courses being learning centered in the following areas: (1) Overall, (2) The Four Domains, and (3) The Individual CIs. The dependent variables were LED-RS scores of nursing didactic course syllabi in the three areas addressed and the independent variables were the faculty characteristic of degree held.

Overall

Due to the Shapiro-Wilk normality assumption being violated, Independent Samples Kruskal-Wallis nonparametric tests were employed. The Independent Samples Kruskal-Wallis nonparametric test, at $\alpha = .05$, was conducted and found no statistically significant differences in the LED-RS scores of nursing didactic course syllabi between the faculty characteristic types, $X^2(4, N = 92) = 1.865, p = .761$.

Table 5

Table of Shapiro Wilk Normality Scores for LED-RS scores by Degree Type

Degree	Statistic	df	Sig.
DNP	.961	8	.823
PhD	.918	18	.120
MSN	.950	54	.025
Unknown	.750	3	.000*
No Primary Instructor	.937	9	.549

Note. *. Violated assumption when using alpha = .01

Table 6

Table of Mean Ranks for LED-RS scores by Degree Type

Degree	<i>N</i>	<i>MR</i>
DNP	8	56.69
PhD	18	47.33
MSN	54	45.31
Unknown	3	52.67
No Primary Instructor	9	40.83

The Four Domains

The second aspect of the analysis explored whether differences existed between LED-RS scores of nursing didactic course syllabi within the different domains by faculty characteristic of degree held. Due to the Shapiro-Wilk normality assumption being violated, Independent Samples Kruskal-Wallis nonparametric tests were employed. See Appendix G for Shapiro-Wilk scores.

LC domain. An Independent Samples Kruskal-Wallis nonparametric test, at $\alpha = .05$, was conducted on data for the LC Domain. Analysis did not find a statistically significant difference existing in the LED-RS scores of nursing didactic course syllabi between the groups, $X^2(4, N = 92) = 6.720, p = .151$, with a mean rank scores of 43.38 for DNPs ($N = 8$), a mean rank score of 39.61 for PhDs ($N = 18$), a mean rank score of 46.73 for MSNs ($N = 54$), a mean rank score of 35.00 if the degree of the instructor was Unknown ($N = 3$), and a mean rank score of 65.50 if No Primary Instructor was noted ($N = 9$).

KC domain. An Independent Samples Kruskal-Wallis nonparametric test, at $\alpha = .05$, was conducted on data for the KC Domain. Analysis did not find a statistically significant difference existing in the LED-RS scores of nursing didactic course syllabi between the groups, $X^2(4, N = 92) = 1.987, p = .738$, with a mean rank scores of 51.13 for DNPs ($N = 8$), a mean rank score of

52.00 for PhDs ($N = 18$), a mean rank score of 44.26 for MSNs ($N = 54$), a mean rank score of 54.00 if the degree of the instructor was Unknown ($N = 3$), and a mean rank score of 42.33 if No Primary Instructor was noted ($N = 9$).

AC domain. An Independent Samples Kruskal-Wallis nonparametric test, at $\alpha = .05$, was conducted on data for the AC Domain. Analysis found a statistically significant difference existing in the LED-RS scores of nursing didactic course syllabi between the groups, $X^2(4, N = 92) = 9.691$, $p = .046$, with a mean rank scores of 62.63 for DNPs ($N = 8$), a mean rank score of 47.92 for PhDs ($N = 18$), a mean rank score of 46.37 for MSNs ($N = 54$), a mean rank score of 59.71 if the degree of the instructor was Unknown ($N = 3$), and a mean rank score of 25.89 if No Primary Instructor was noted ($N = 9$).

In order to control for type I error in pairwise comparisons, adjusted significance levels are used. Adjusted significance levels are determined by multiplying the unadjusted significance values by the number of comparisons. Pairwise comparisons using the Kruskal-Wallis test revealed statistically significant differences between groups. Syllabi of individuals with DNPs, having a mean rank of 62.62 and a mean of 1.2500 (99% CI = .7214 to 1.7786), had more propensity for being assessment-centered ($p = .033$) than syllabi of individuals having No Primary Instructor Noted, having a mean rank of 25.89 and a mean of .6296 (99% CI = .0568 to 1.2025).

CC domain. An Independent Samples Kruskal-Wallis nonparametric test, at $\alpha = .05$, was conducted on data for the LC Domain. Analysis did not find a statistically significant difference existing in the LED-RS scores of nursing didactic course syllabi between the groups, $X^2(4, N = 92) = 3.762$, $p = .439$, with a mean rank scores of 60.25 for DNPs ($N = 8$), a mean rank score of

48.64 for PhDs ($N = 18$), a mean rank score of 44.63 for MSNs ($N = 54$), a mean rank score of 55.00 if the degree of the instructor was Unknown ($N = 3$), and a mean rank score of 38.39 if No Primary Instructor was noted ($N = 9$).

Individual Content Items

A third aspect of the analysis explored whether differences existed between faculty degree types for the different CIs. Due to the Shapiro-Wilk normality assumption being violated for each CI, Independent Samples Kruskal-Wallis nonparametric tests were employed. See Appendix H for Shapiro-Wilk normality scores for faculty degree types by CI.

CI 1 - Cultural basis acknowledgment. An Independent Samples Kruskal-Wallis nonparametric test, at $\alpha = .05$, was conducted on data for CI 1. Analysis found no statistical difference on CI 1 scores between degree types,

$X^2(4, N = 92) = 3.169, p = .530$. See Appendix I for summary table of mean ranks for CIs.

CI 2 - Conceptual and cultural knowledge building. An Independent Samples Kruskal-Wallis nonparametric test, at $\alpha = .05$, was conducted on data for CI 2. Analysis found no statistical difference on CI 2 scores between degree types, $X^2(4, N = 92) = 1.948, p = .745$.

CI 3 - Course goals / objectives. An Independent Samples Kruskal-Wallis nonparametric test, at $\alpha = .05$, was conducted on data for CI 3. Analysis found no statistical difference on CI 3 scores between degree types, $X^2(4, N = 92) = 6.974, p = .137$.

CI 4 - Teaching practices. An Independent Samples Kruskal-Wallis nonparametric test, at $\alpha = .05$, was conducted on data for CI 4. Analysis found no statistical difference on CI 4 scores between degree types, $X^2(4, N = 92) = 7.652, p = .105$.

CI 5 - Need for knowledge. An Independent Samples Kruskal-Wallis nonparametric test, at $\alpha = .05$, was conducted on data for CI 5. Analysis found no statistical difference on CI 5 scores between degree types, $X^2(4, N = 92) = 5.786, p = .216$.

CI 6 - Metacognitive practices and sense-making. An Independent Samples Kruskal-Wallis nonparametric test, at $\alpha = .05$, was conducted on data for CI 6. Analysis found no statistical difference on CI 6 scores between degree types, $X^2(4, N = 92) = 2.817, p = .589$.

CI 7 - Engagement and doing. An Independent Samples Kruskal-Wallis nonparametric test, at $\alpha = .05$, was conducted on data for CI 7. Analysis found no statistical difference on CI 7 scores between degree types, $X^2(4, N = 92) = 3.018, p = .555$.

CI 8 - Competency and mastery. An Independent Samples Kruskal-Wallis nonparametric test, at $\alpha = .05$, was conducted on data for CI 8. Analysis found a statistically significant difference on CI 8 scores between degree types, $X^2(4, N = 92) = 11.576, p = .021$. In order to control for type I error in pairwise comparisons, adjusted significance levels are used. Adjusted significance levels are determined by multiplying the unadjusted significance values by the number of comparisons. Pairwise comparisons using the Kruskal-Wallis test revealed statistically significant differences between groups. Syllabi of individuals with Unknown degrees, having a mean rank of 70.83 and a mean of 1.000 (99% CI = -4.7301 to 6.7301) had more propensity for competency and mastery findings in their syllabi ($p = .031$) than syllabi of individuals having a PhD, having a mean rank of 44.28 and a mean of .1667 (99% CI = -.3164 to 2.0945). Syllabi of individuals with Unknown degrees, having a mean rank of 70.83 and a mean of 1.000 (99% CI = -4.7301 to 6.7301) had more propensity for competency and mastery findings in their syllabi ($p = .024$) than syllabi of individuals having MSN degrees, having a mean rank of 44.83 and a mean of .1296 (99% CI = -.0440 to .3033).

CI 9 - Course assignments. An Independent Samples Kruskal-Wallis nonparametric test, at $\alpha = .05$, was conducted on data for CI 9. Analysis found no statistical difference on CI 9 scores between degree types, $X^2(4, N = 92) = 2.634, p = .621$.

CI 10 – Evaluation. An Independent Samples Kruskal-Wallis nonparametric test, at $\alpha = .05$, was conducted on data for CI 10. Analysis found a statistically significant difference on CI 10 scores between degree types, $X^2(4, N = 92) = 13.232, p = .010$. In order to control for type I error in pairwise comparisons, adjusted significance levels are used. Adjusted significance levels are determined by multiplying the unadjusted significance values by the number of comparisons. Pairwise comparisons using the Kruskal-Wallis test revealed statistically significant differences between groups. Syllabi with DNPs, having a mean rank of 54.75 and a mean of 2.000 (99% CI = 1.3387 to 2.6613) had more propensity for evaluation opportunities in their syllabi ($p = .022$) than syllabi with No Primary Instructor Noted, having a mean rank of 23.28 and a mean of .8889 (99% CI = -.1490 to 1.9268). Next, syllabi with MSNs, having a mean rank of 48.69 and a mean of 1.8148 (99% CI = 1.6021 to 2.0276) had more propensity for evaluation opportunities in their syllabi ($p = .008$) than syllabi with No Primary Instructor Noted, having a mean rank of 23.28 and a mean of .8889 (99% CI = -.1490 to 1.9268).

CI 11 - Revisioning. An Independent Samples Kruskal-Wallis nonparametric test, at $\alpha = .05$, was conducted on data for CI 11. Analysis found no statistical difference on CI 11 scores between degree types, $X^2(4, N = 92) = 4.761, p = .313$.

CI 12 - Class culture / norms. An Independent Samples Kruskal-Wallis nonparametric test, at $\alpha = .05$, was conducted on data for CI 12. Analysis found no statistical difference on CI 12 scores between degree types, $X^2(4, N = 92) = 3.968, p = .410$.

CI 13 – Collaboration. An Independent Samples Kruskal-Wallis nonparametric test, at $\alpha = .05$, was conducted on data for CI 13. Analysis found a statistically significant difference on CI 13 scores between degree types, $X^2(4, N = 92) = 10.312, p = .035$. In order to control for type I error in pairwise comparisons, adjusted significance levels are used. Adjusted significance levels are determined by multiplying the unadjusted significance values by the number of comparisons. Pairwise comparisons using the Kruskal-Wallis test did not reveal significant differences between groups at the .05 significance level. This is probably due to small sample size.

CI 14 - Contextual learning. An Independent Samples Kruskal-Wallis nonparametric test, at $\alpha = .05$, was conducted on data for CI 14. Analysis found no statistical difference on CI 14 scores between degree types, $X^2(4, N = 92) = 3.855, p = .426$.

Research Question 4

Are certain nursing didactic courses more learning centered than others?

The evaluation of RQ 4 included assessing whether certain nursing didactic courses were more learning centered than others in the following areas: (1) Overall, (2) The Four Domains, and (3) The Individual CIs.

Overall

In this analysis the independent variable was represented by the various course types and the dependent variable was represented by LED-RS scores on syllabi. The Shapiro-Wilk's test for normality ($p > .01$) was not violated. See Appendix J for Shapiro-Wilk test of normality scores by course. The *Levene's F* test on the other hand revealed that the homogeneity of variance assumption was not met ($p = .003$) for this data. Due to this finding a *Welch F* test was used. An alpha level of .05 was used for the analysis.

Table 7

Table Summary of Means and Standard Deviations for Scores Received in Courses

Course	<i>N</i>	<i>M</i>	<i>SD</i>
Fundamentals / Introduction to Nursing	15	.8238	.2352
Adult Health 1 / Common Concepts 1	7	.5714	.2827
Adult Health 2 / Complex Concepts 2	7	.6020	.3164
Obstetric Nursing	3	.5952	.1091
Pediatric Nursing	4	.9643	.2509
Obstetric / Pediatric Nursing Combination	5	.7286	.3366
Mental Health Nursing	9	.7937	.2730
Community / Public Health Nursing	6	1.0833	.4366
Nursing Pharmacology	12	.7024	.3430
Management / Leadership Nursing	11	1.1299	.5420
Nursing Pathophysiology	10	.6071	.2921
Geriatric Nursing	5	1.0286	.0639
Total	94	.8040	.3654

The one-way ANOVA of LED-RS scores between individual courses revealed a statistically significant main effect, *Welch's F*(11, 24.117) = 5.699, $p < .001$, indicating that not all courses had the same average score on the LED-RS. The estimated omega squared ($\omega^2 = .354$) indicated that approximately 35.4 % of the total variation in average LED-RS scores is attributable to differences between course types. The magnitude of this effect size falls in the small to moderate range (Kotrlík & Williams, 2003).

Post hoc comparisons, using Games-Howell post hoc procedure, were conducted to determine which pairs of courses differed significantly. Results indicated a significant interaction ($p = .033$) between two courses: pathophysiology courses ($M = .6071$; $SD = .2921$) and geriatric nursing courses ($M = 1.0286$; $SD = .0639$). Table 8 contains significant results of the Games-Howell Multiple Comparisons. See Appendix K for full Games-Howell Multiple Comparisons Table.

A multivariate test, Pillai's Trace, was employed to assess whether an actual difference exists between pathophysiology courses and geriatric nursing courses. Pillai's Trace indicated no significant difference between nursing pathophysiology courses and geriatric nursing courses (Pillai's Trace = 1.832, $F = 1.128$, $df = (154)$, $p = .156$). The finding of no difference on the Pillai's Trace conflicts with the ANOVA finding. This finding is more than likely due to small sample size.

Table 8

Table of Significant Results of the Games-Howell Multiple Comparisons

Course	Nursing Course	MD	SE	Sig.
Nursing Pathophysiology	Fundamentals of Nursing	-.21667	.11054	.711
	Adult Health 1 / Common Concepts 1	.03571	.14125	1.000
	Adult Health 2 / Complex Concepts 2	.00510	.15110	1.000
	Obstetric Nursing	.01190	.11180	1.000
	Pediatric Nursing	-.35714	.15577	.548
	Obstetric / Pediatric Nursing	-.12143	.17659	1.000
	Mental Health Nursing	-.18651	.12967	.939
	Community / Public Health Nursing	-.47619	.20076	.503
	Nursing Pharmacology	-.09524	.13541	1.000
	Management / Leadership Nursing	-.52273	.18770	.272
	Geriatric Nursing	-.42143*	.09669	.033
Geriatric Nursing	Fundamentals of Nursing	.20476	.06710	.172
	Adult Health 1 / Common Concepts 1	.45714	.11061	.081
	Adult Health 2 / Complex Concepts 2	.42653	.12295	.169
	Obstetric Nursing	.43333	.06917	.075
	Pediatric Nursing	.06429	.12864	1.000
	Obstetric / Pediatric Nursing	.30000	.15320	.708
	Mental Health Nursing	.23492	.09539	.449
	Community / Public Health Nursing	-.05476	.18053	1.000
	Nursing Pharmacology	.32619	.10306	.167
	Management / Leadership Nursing	-.10130	.16588	1.000
	Nursing Pathophysiology	.42143*	.09669	.033

Note. *. The mean difference is significant at the 0.05 level.

The Four Domains

In the analysis for each domain the independent variable was represented by course types and the dependent variable was represented by LED-RS scores within the four domains. The Shapiro Wilk's test for normality ($p > .01$) was found to have been violated in the LC, KC, and AC domains. Shapiro Wilk's test for normality ($p > .01$) was not found to have been violated in the in the CC domain. See Appendix L for Shapiro-Wilk test of normality scores by course within the four domains. Due to these findings, Independent Samples Kruskal-Wallis nonparametric test were employed for LC, KC, and AC domains and ANOVA for the CC domain. See Appendix M for mean ranks by domain.

LC domain. An Independent Samples Kruskal-Wallis nonparametric test, at $\alpha = .05$, conducted on data for the LC Domain found that no statistically significant difference existed in the LED-RS scores between nursing didactic courses in the LC domain, $X^2(11, N = 94) = 6.111$, $p = .866$.

Table 9

Table of Means and Standard Deviations of courses in the Learner-Centered Domain

Course	<i>N</i>	<i>MD</i>	<i>M</i>	<i>SD</i>
Fundamentals / Introduction to Nursing	15	1.000	.9500	.3433
Adult Health 1 / Common Concepts 1	7	1.000	.9643	.3934
Adult Health 2 / Complex Concepts 2	7	1.000	1.000	.3536
Obstetric Nursing	3	1.000	1.000	.2500
Pediatric Nursing	4	.8750	.8750	.3228
Obstetric and Pediatric Nursing Combination	5	1.2500	1.100	.3791
Mental Health Nursing	9	1.000	1.0556	.4290
Community / Public Health Nursing	6	.8750	1.000	.3873
Nursing Pharmacology	12	.7500	.8958	.4325
Management / Leadership Nursing	11	1.000	1.1591	.4369
Nursing Pathophysiology	10	.8750	.9000	.2935
Geriatric Nursing	5	1.2500	1.2500	.3536

KC domain. An Independent Samples Kruskal-Wallis nonparametric test, at $\alpha = .05$, conducted on data for the KC Domain found that a statistically significant difference did exist in the LED-RS scores between nursing didactic courses, $X^2(11, N = 94) = 27.789, p = .003$. In order to control for type I error in pairwise comparisons, adjusted significance levels are used. Adjusted significance levels are determined by multiplying the unadjusted significance values by the number of comparisons. Pairwise comparisons using the Kruskal-Wallis test did not reveal significant differences between groups at the .05 significance level.

Table 10

Table of Means and Standard Deviations of courses in the Knowledge-Centered Domain

Course	<i>N</i>	<i>MD</i>	<i>M</i>	<i>SD</i>
Fundamentals / Introduction to Nursing	15	.2500	.3667	.2814
Adult Health 1 / Common Concepts 1	7	.0000	.1071	.1967
Adult Health 2 / Complex Concepts 2	7	.0000	.1786	.3134
Obstetric and Pediatric Nursing Combination	5	.0000	.2500	.3536
Mental Health Nursing	9	.5000	.4444	.3909
Community / Public Health Nursing	6	.5000	.8333	.9443
Nursing Pharmacology	12	.0000	.2500	.3371
Management / Leadership Nursing	11	.7500	.8864	.7191
Nursing Pathophysiology	10	.0000	.1500	.2687
Geriatric Nursing	5	.7500	.8000	.4472

Note. KC average is constant when course type Obstetric Nursing and Pediatric Nursing

AC domain. An Independent Samples Kruskal-Wallis nonparametric test, at $\alpha = .05$, conducted on data for the AC Domain found that no statistically significant difference existed in the LED-RS scores between nursing didactic courses, $X^2(11, N = 94) = 14.745, p = .194$.

Table 11

Table of Means and Standard Deviations of courses in the Assessment-Centered Domain

Course	<i>N</i>	<i>MD</i>	<i>M</i>	<i>SD</i>
Fundamentals / Introduction to Nursing	15	1.3333	1.1111	.4303
Adult Health 1 / Common Concepts 1	7	.6667	.8571	.2623
Adult Health 2 / Complex Concepts 2	7	1.000	.7619	.5345
Obstetric Nursing	3	.6667	.7778	.1925
Pediatric Nursing	4	1.3333	1.2500	.1667
Obstetric and Pediatric Nursing Combination	5	1.0000	1.0667	.1491
Mental Health Nursing	9	1.000	1.0370	.4231
Community / Public Health Nursing	6	1.1667	1.1667	.3496
Nursing Pharmacology	12	1.0000	1.0000	.4714
Management / Leadership Nursing	11	1.3333	1.1515	.4562
Nursing Pathophysiology	10	.8333	.8333	.4513
Geriatric Nursing	5	1.3333	1.2667	.3652

CC domain. Since Levene's homogeneity of variance assumption ($.336 > .01$) has not been violated, a one-way ANOVA was used to evaluate whether differences existed between nursing didactic courses in the CC domain. A one-way ANOVA, at $\alpha = .05$ found a statistically significant difference between groups on a standardized test, $F(11, 82) = 2.524, p = .009$. Table 9 contains the ANOVA table.

Table 12

ANOVA Table of Course Difference in the Community-Centered Domain

	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>Sig.</i>
Between Groups	10.665	11	.970	2.524	.009
Within Groups	31.497	82	.384		
Total	42.162	93			

A Tukey post hoc comparison test indicated that there was a significant difference between courses. A statistically significant difference ($p = .048$) was found with Management /

Leadership Nursing courses ($M = 1.3939$) being more community centered than Adult Health 1 / Common Concepts 1 courses ($M = .3810$).

Table 13

Table of Means and Standard Deviations of courses in the Community-Centered Domain

Course	<i>N</i>	<i>M</i>	<i>SD</i>
Fundamentals / Introduction to Nursing	15	.9778	.6232
Adult Health 1 / Common Concepts 1	7	.3810	.4880
Adult Health 2 / Complex Concepts 2	7	.4762	.4658
Obstetric Nursing	3	.3333	.3333
Pediatric Nursing	4	1.0833	.6872
Obstetric and Pediatric Nursing Combination	5	.5333	.6498
Mental Health Nursing	9	.6667	.5271
Community / Public Health Nursing	6	1.4444	.7201
Nursing Pharmacology	12	.7500	.6533
Management / Leadership Nursing	11	1.3939	.8276
Nursing Pathophysiology	10	.6000	.6045
Geriatric Nursing	5	.8000	.2981
Total	94	.8262	.6733

Individual Content Items

A third aspect of the analysis explored whether differences existed between course types within the different CIs. Due to the Shapiro-Wilk normality assumption being violated, Independent Samples Kruskal-Wallis nonparametric tests were employed for all CIs. See Appendix N for Shapiro Wilks normality scores for CIs. See Appendix O for course mean ranks by CI.

CI 1 - Cultural basis acknowledgment. An Independent Samples Kruskal-Wallis nonparametric test, at $\alpha = .05$, was conducted on data for CI 1. Analysis found no statistically significant difference on CI 1 scores between course types, $X^2(11, N = 94) = 4.509, p = .953$.

CI 2 - Conceptual and cultural knowledge building. An Independent Samples

Kruskal-Wallis nonparametric test, at $\alpha = .05$, was conducted on data for CI 2. Analysis found no statistically significant difference on CI 2 scores between course types, $X^2(11, N = 94) = 7.320$, $p = .773$.

CI 3 - Course goals / objectives. An Independent Samples Kruskal-Wallis

nonparametric test, at $\alpha = .05$, was conducted on data for CI 3. Analysis found no statistically significant difference on CI 3 scores between course types, $X^2(11, N = 94) = 5.628$, $p = .897$.

CI 4 - Teaching practices. An Independent Samples Kruskal-Wallis nonparametric test, at $\alpha = .05$, was conducted on data for CI 4. Analysis found no statistically significant difference on CI 4 scores between course types, $X^2(11, N = 94) = 12.171$, $p = .351$.

CI 5 - Need for knowledge. An Independent Samples Kruskal-Wallis nonparametric test, at $\alpha = .05$, was conducted on data for CI 5. Analysis indicated a statistically significant difference on CI 5 scores between course types, $X^2(11, N = 94) = 21.799$, $p = .026$. In order to control for type I error in pairwise comparisons, adjusted significance levels are used. Adjusted significance levels are determined by multiplying the unadjusted significance values by the number of comparisons. Pairwise comparisons of course types indicated statistically significant differences. Community / Public Health Nursing having a mean rank of 61.83 had more propensity for expressing a need for knowledge ($p = .005$) than Fundamentals of Nursing courses having a mean rank of 46.00. Community / Public Health Nursing having a mean rank of 61.83 had more propensity for expressing a need for knowledge ($p = .040$) than Adult Health 1 / Complex Concepts 1 which had a mean rank of 46.00. Community / Public Health Nursing having a mean rank of 61.83 had more propensity for expressing a need for knowledge ($p = .040$) than Adult Health 2 / Complex Concepts 2 which had a mean rank of 46.00. Community / Public

Health Nursing having a mean rank of 61.83 had more propensity for expressing a need for knowledge ($p = .020$) than Mental Health Nursing which had a mean rank of 46.00. Community / Public Health Nursing having a mean rank of 61.83 had more propensity for expressing a need for knowledge ($p = .009$) than Nursing Pharmacology which had a mean rank of 46.00. Community / Public Health Nursing having a mean rank of 61.83 had more propensity for expressing a need for knowledge ($p = .011$) than Management / Leadership Nursing which had a mean rank of 46.00.

CI 6 - Metacognitive practices and sense-making. An Independent Samples Kruskal-Wallis nonparametric test, at $\alpha = .05$, was conducted on data for CI 6. Analysis indicated a statistically significant difference on CI 6 scores between course types, $X^2(11, N = 94) = 19.813$, $p = .048$. In order to control for type I error in pairwise comparisons, adjusted significance levels are used. Adjusted significance levels are determined by multiplying the unadjusted significance values by the number of comparisons. Pairwise comparisons of course types on the other hand did not indicate statistically significant differences between course types. This finding conflicts with the Independent Samples Kruskal-Wallis test and is probably due to small sample size.

CI 7 - Engagement and doing. An Independent Samples Kruskal-Wallis nonparametric test, at $\alpha = .05$, was conducted on data for CI 7. Analysis indicated a statistically significant difference on CI 7 scores between course types, $X^2(11, N = 94) = 29.302$, $p = .002$. In order to control for type I error in pairwise comparisons, adjusted significance levels are used. Adjusted significance levels are determined by multiplying the unadjusted significance values by the number of comparisons. Pairwise comparisons of course types indicated statistically significant differences. Management / Leadership Nursing courses having a mean rank of 66.73 had more

propensity for engagement and doing ($p = .031$) than Nursing Pathophysiology courses which had a mean rank of 27.30.

CI 8 - Competency and mastery. An Independent Samples Kruskal-Wallis nonparametric test, at $\alpha = .05$, was conducted on data for CI 8. Analysis found no statistically significant difference on CI 8 scores between course types, $X^2(11, N = 94) = 7.986, p = .715$.

CI 9 - Course assignments. An Independent Samples Kruskal-Wallis nonparametric test, at $\alpha = .05$, was conducted on data for CI 9. Analysis indicated a statistically significant difference on CI 9 scores between course types, $X^2(11, N = 94) = 22.805, p = .019$. In order to control for type I error in pairwise comparisons, adjusted significance levels are used. Adjusted significance levels are determined by multiplying the unadjusted significance values by the number of comparisons. Pairwise comparisons of course types on the other hand did not indicate statistically significant differences between course types. This finding conflicts with the Independent Samples Kruskal-Wallis test and is probably due to small sample size.

CI 10 – Evaluation. An Independent Samples Kruskal-Wallis nonparametric test, at $\alpha = .05$, was conducted on data for CI 10. Analysis found no statistically significant difference on CI 10 scores between course types, $X^2(11, N = 94) = 7.884, p = .724$.

CI 11 - Revisioning. An Independent Samples Kruskal-Wallis nonparametric test, at $\alpha = .05$, was conducted on data for CI 11. Analysis found no statistically significant difference on CI 11 scores between course types, $X^2(11, N = 94) = 5.931, p = .878$.

CI 12 - Class culture / norms. An Independent Samples Kruskal-Wallis nonparametric test, at $\alpha = .05$, was conducted on data for CI 12. Analysis found no statistically significant difference on CI 12 scores between course types, $X^2(11, N = 94) = 6.775, p = .817$.

CI 13 - Collaboration. An Independent Samples Kruskal-Wallis nonparametric test, at $\alpha = .05$, was conducted on data for CI 13. Analysis indicated a statistically significant difference on CI 13 scores between course types, $X^2(11, N = 94) = 23.602, p = .015$. In order to control for type I error in pairwise comparisons, adjusted significance levels are used. Adjusted significance levels are determined by multiplying the unadjusted significance values by the number of comparisons. Pairwise comparisons of course types on the other hand did not indicate statistically significant differences between course types. This finding conflicts with the Independent Samples Kruskal-Wallis test and is probably due to small sample size.

CI 14 - Contextual learning. An Independent Samples Kruskal-Wallis nonparametric test, at $\alpha = .05$, was conducted on data for CI 14. Analysis found a statistically difference on CI 14 scores between course types, $X^2(11, N = 94) = 23.951, p = .013$. In order to control for type I error in pairwise comparisons, adjusted significance levels are used. Adjusted significance levels are determined by multiplying the unadjusted significance values by the number of comparisons. Pairwise comparisons of course types on the other hand did not indicate statistically significant differences between course types. This finding conflicts with the Independent Samples Kruskal-Wallis test and is probably due to small sample size.

Summary of Results

Results for RQ 1 revealed the overall sample of syllabi approaches minimal propensity for being learning-design centered. Cronbach's alpha computed for internal consistency of the raters was high ($\alpha = .803$). The individual domains e.g. Learner-Centered, Assessment-Centered, Community-Centered, and Knowledge-Centered, were all found to approach minimal propensity for being learning-design centered. Assessment-Centered had the highest average ($M = 1.0248$) and Knowledge-Centered had the lowest average ($M = .4229$). Descriptive statistics calculated for each CI indicated all items scoring at either the 'moderate' or 'minimal' propensity levels.

As for results on RQ 2, Independent Samples Kruskal-Wallis nonparametric tests were used to evaluate differences on LED-RS scores of faculty between Public Doctorate-granting Universities versus Public Master's-granting Colleges and Universities in the following areas: (1) Overall, (2) The Four Domains, and (3) The Individual CIs.

Overall, an Independent Samples Kruskal-Wallis nonparametric test found no statistically significance difference in the overall LED-RS scores of nursing didactic course syllabi between faculty at Public Master's-granting Colleges and Universities versus Public Doctorate-granting Universities.

As for the four domains, Independent Samples Kruskal-Wallis nonparametric tests conducted identified a statistically significant difference between institution types in the LC Domain. Based on analysis, Public Master's-granting Colleges and Universities had more propensity for being learning-centered ($p = .012$) than Public Doctorate-granting Universities. Independent Samples Kruskal-Wallis nonparametric tests conducted on data from the KC, AC, and CC domains found no statistically significant differences between faculty in the two institution types.

Lastly, for the individual CIs, Independent Samples Kruskal-Wallis nonparametric tests were conducted to ascertain whether statistically significant differences existed between institution types. Significant differences were found between for CI 4 (Teaching Practices) and CI 13 (Collaboration). For CI 4 (Teaching Practices), Public Master's-granting Colleges and Universities had more propensity for using more learning practices ($p = .019$) than Public Doctorate-granting. For CI 13 (Collaboration), Public Master's-granting Colleges and Universities had more propensity for using more collaboration ($p = .022$) than Public Doctorate-granting Universities.

As for results on RQ 3, Independent Samples Kruskal-Wallis nonparametric tests were used to evaluate differences on LED-RS scores between faculty characteristic of degree held in the following areas: (1) Overall, (2) The Four Domains, and (3) The Individual CIs.

Overall, an Independent Samples Kruskal-Wallis nonparametric test found no statistically significance differences in the overall LED-RS scores of nursing didactic course syllabi between the differing degrees held by faculty as reported on syllabi.

As for the four domains, Independent Samples Kruskal-Wallis nonparametric tests conducted on LED-RS Domains identified a statistically significant difference between faculty degree types in the AC Domain only. Pairwise comparisons using the Kruskal-Wallis test revealed individuals with DNPs had more propensity for being assessment-centered ($p = .033$) than syllabi of individuals having No Primary Instructor Noted. Independent Samples Kruskal-Wallis nonparametric tests conducted on data from the LC, KC, and CC domains found no a statistically significant differences between faculty characteristic of degree held.

As for the individual CIs, Independent Samples Kruskal-Wallis nonparametric tests were conducted on all CIs to ascertain whether statistically significant differences existed between LED-RS scores and faculty degree types. Significant differences between degree types were found in CI 8 (Competency and Mastery) and CI 10 (Evaluation).

For CI 8 (Competency and Mastery), Kruskal-Wallis pairwise comparisons identified syllabi of individuals with Unknown degrees had more propensity for revealing ways of helping students achieve competency and mastery ($p = .031$) than syllabi of individuals having a PhD. Additionally, syllabi of individuals with Unknown degrees had more propensity for competency and mastery findings in their syllabi ($p = .024$) than syllabi of individuals having MSN degrees.

For CI 10 (Evaluation), Kruskal-Wallis pairwise comparisons identified syllabi with DNPs had more propensity for evaluation opportunities in their syllabi ($p = .022$) than syllabi with No Primary Instructor Noted. Additionally, syllabi with MSNs, had more propensity for evaluation opportunities in their syllabi ($p = .008$) than syllabi with No Primary Instructor Noted.

Finally, evaluation of RQ 4 included assessing whether certain nursing didactic courses were more learning centered than others in the following areas: (1) Overall, (2) The Four Domains, and (3) The Individual CIs.

As for overall differences, an one-way ANOVA of LED-RS scores between course types indicated a statistically significant main effect, *Welch's* $F(11, 24.117) = 5.699, p < .001$, with not all courses having the same average score on the LED-RS. The estimated omega squared ($\omega^2 = .354$) indicated that approximately 35.4 % of the total variation in average LED-RS scores is attributable to differences between course types. A Games-Howell post hoc procedure indicated a significant interaction ($p = .033$) with geriatric nursing courses ($M = 1.0286; SD = .0639$) being overall more learning-centered than pathophysiology courses ($M = .6071; SD = .2921$). A multivariate test, Pillai's Trace, employed to assess actual difference between the two courses found contradictory findings and no significant difference (Pillai's Trace = 1.832, $F = 1.128, df = (154), p = .156$).

As for the four domains, Independent Samples Kruskal-Wallis nonparametric tests conducted on all LED-RS Domains identified a statistically significant difference in the LED-RS scores in the KC domain between nursing didactic courses, $X^2(11, N = 94) = 27.789, p = .003$. Pairwise comparisons using the Kruskal-Wallis test though did not reveal significant differences between groups at the .05 significance level. This is probably due to small sample size.

A one-way ANOVA, at $\alpha = .05$, was used to assess differences in the CC Domain found a statistically significant difference between groups on a standardized test, $F(11, 82) = 2.524, p = .009$. A Tukey post hoc comparison test indicated that there was a significant difference between courses. A statistically significant difference ($p = .048$) was found with Management / Leadership Nursing courses ($M = 1.3939$) being more community centered than Adult Health 1 / Common Concepts 1 courses ($M = .3810$).

As for the individual CIs, Independent Samples Kruskal-Wallis nonparametric tests were conducted on all CIs to ascertain whether statistically significant differences existed between LED-RS scores and course types. Pairwise comparisons using adjusted significance levels revealed significant differences between course types for CI 5 (Need for Knowledge) and CI 7 (Engagement and Doing).

For CI 5 (Need for Knowledge) Independent Samples Kruskal-Wallis nonparametric test indicated a statistically significant difference between course types, $X^2(11, N = 94) = 21.799, p = .026$. Pairwise comparisons indicated several statistically significant differences. Community / Public Health Nursing had more propensity for expressing a need for knowledge when compared to Fundamentals of Nursing courses ($p = .005$), Adult Health 1 / Complex Concepts 1 courses ($p = .040$), Adult Health 2 / Complex Concepts 2 courses ($p = .040$), Mental Health Nursing courses ($p = .020$), Nursing Pharmacology courses ($p = .009$), and Management / Leadership Nursing courses ($p = .011$).

For CI 7 (Engagement and Doing), an Independent Samples Kruskal-Wallis nonparametric test indicated a statistically significant difference on scores between course types, $X^2(11, N = 94) = 29.302, p = .002$. Pairwise comparisons indicated statistically significant

differences with a finding that Management / Leadership Nursing courses had more propensity ($p = .031$) for engagement and doing than Nursing Pathophysiology courses.

Chapter VI will include a discussion of the analysis of the results along with implications for future research.

CHAPTER VI

DISCUSSION

The purpose of this dissertation research project was two-fold. The first purpose of was to develop a rubric to evaluate syllabi based on the framework of learning environment design as proposed by the National Research Council (Bransford et al., 2000). To this end the LED-RS was developed and tested for validity and reliability. The hope was that this instrument would be found useful by faculty interested in becoming more learning centered in their course design practices, would offer a way forward to help faculty evaluate their own learning design practices, and be useful as an aid when developing syllabi. This process was performed and reported on in Chapter IV of this Dissertation.

The second purpose of the study was to use the LED-RS to investigate the propensity of a sample of nursing syllabi for their overall reflection of use of LED principles. Additionally, similarities and differences were assessed between institution types, degree types, and course types to develop a picture of current learning design practice. This chapter will offer a discussion of study findings and conclusions originating from results presented in Chapter V of this Dissertation. Chapter VI also includes general study limitations, implications, and future research considerations.

Background

The sample, didactic course syllabi from public BSN programs, used in this study was felt to be adequate in number although more syllabi would have been appreciated. Didactic course syllabi were collected from 16 out of a potential 21 public BSN programs in the State of

Texas. This 76.2 % inclusion rate of schools in the population was felt to be a high percentage of the available programs and should offer substantial findings in the data analysis.

The yield of course syllabi from these 16 programs corresponding to the courses sought for use in this study totaled 81. If all 21 schools had the corresponding 10 to 11 courses included in this study, then the syllabi total would have been between 210 and 231 syllabi. Many of the classes evaluated had a clinical component or were online courses and had to be excluded from the sample. Some programs did not have a course that corresponded to one of the ones being collected and thus left fewer syllabi for evaluation. The syllabi from the five schools not included in the data analysis were contacted and either would not release syllabi, refused to participate, or did not respond to the request for course syllabi. The five schools not included in the population of syllabi would have potentially offered another 50 to 55 syllabi to offer a total of 131 to 136 syllabi. The percentage of syllabi included in this study out of the potential 136 total was 59.6 %. Again, this high percentage of the available syllabi was felt should offer substantial findings in the data analysis.

As part of the research method a subset of syllabi were scored by both raters to allow for interrater reliability to be calculated. Cronbach's alpha computed for internal consistency of the raters was .803, indicating a strong positive relationship between the two raters. For comparison to the Pearson r results as noted in Chapter IV, a Pearson Correlation Coefficient was also calculated for the test sample. The Pearson Correlation Coefficient of the test sample was $r = .671, p < .01$. The correlation was slightly lower than the result found in the pilot study ($r = .75, p < .01$), but still revealed a strong positive relationship between the two raters.

Research Question 1

To what overall extent do nursing didactic course syllabi reflect the propensity for being learning centered?

A review of education and nursing literature related that one locus for reform in nursing is in the area of learning environment design (Benner et al, 2010; Bransford et al., 2000; Candela et al., 2006; Colley, 2012; Doyle, 2011; Stanley & Dougherty, 2010; Weimer, 2002). Due to a literature review identifying that there was no data related to how nurse educators actually design courses, RQ 1 was posed to ascertain current faculty practice regarding course design and whether there was evidence of the learning environment design principles in course syllabi.

Statistical analysis revealed the study sample had an overall ‘minimal’ propensity for being learning design centered. Analysis of how the sample performed on the different perspectives of learning design e.g. Learner-Centered, Community-Centered, Knowledge-Centered, and Assessment-Centered, was conducted and did not reveal scores that were that dissimilar when compared to the overall Grand Mean. All mean scores for the different domains were in the minimal to slightly moderate propensity levels. Lastly, analysis of how syllabi scored on the individual CIs indicated all items scoring at either the ‘moderate’ or ‘minimal’ propensity levels.

Overall, these findings are perplexing given the fact that for approximately a decade and one-half multiple individuals have published on problems inherent in nursing education and that change needs to be made involving the nursing education system. Additionally, the indication here is that even though the shift towards using learning-centeredness in course design and pedagogical practice was identified as a potential starting point for transforming nursing education (Benner et al., 2010; IOM, 2010; NLN, 2003; NLN, 2005; Stanley & Dougherty,

2010) little evidence exists that this is the case and begs one to question what has been occurring within educational programs to resolve some of the issues.

What these findings do reveal is that there are still issues in the nursing education arena on many levels. First, these findings support a formerly identified problem where many faculty members continue to rely on traditional teacher-centered pedagogies (Candela et al., 2006; Doyle, 2011; Stanley & Dougherty, 2010; Weimer, 2002; Zorek et al., 2010). One reason for this may be the hurdle of changing culture within nursing programs. As noted in the literature, in most cases teachers continue to teach the way they were taught (Bachman et al., 1992; McDonald, 2004). If a department's culture mainly supports and imposes on its faculty the strict use of lecture for teaching and using multiple choice style tests for evaluation, then any change to that way of classroom operation might just be detrimental to the faculty continuing at that school in that role. Second, even though current literature stresses the importance of improving nursing education by including LC practices in course design (Houlder & Collier, 1999; Weimer, 2002; Miller 2004; Hubball et al., 2007; Straits, 2007; Blumberg, 2009; Billings, 2012), there is little evidence that LC practices are finding their way into current nursing education practice. This issue may be occurring due to the finding that most new faculty entering the classroom come from a clinical background with limited or no engagement in pedagogical coursework. On the whole, these findings support Benner and colleagues' (2010) contention that the current education system will continue to underprepare nursing graduates to function in an increasingly changing health care workplace.

The Four Domains

As for the findings among the domains, the AC Domain items scored the highest and entered slightly into the 'moderate' propensity range. Much has been reported in the nursing

literature regarding the importance of assessment (Barr & Tagg, 1995; Huba & Freed, 2000; Mohanty et al., 2005; Clark & Rust, 2006; Niemi et al., 2007). This finding is interesting as one would have expected the score to be higher since assessment of student learning outcomes in nursing is such a big part of each class and as a program whole as far as accreditation is concerned. Additionally, nursing programs across Texas are required to be accredited to function within the state. To find such little evidence of assessment practice seems strange with the assessment expectation in place.

The LC Domain items scored in the ‘minimal’ propensity range for being learning-design centered. This finding is curious in that one would expect that a major focus would be on students acquiring “knowledge, skills and attitudes,” (Bransford et al., 2000, p.133) from educational experiences. Literature relates that a student’s understandings, practices, and beliefs have cultural basis (Bransford et al., 2000) and that teachers understanding this, pay close attention to the individual progress of each student and devise tasks using applicable instructional practices as appropriate with regard to what the “student knows, cares about, is able to do, and wants to do” (Bransford et al., 2000, p. 136). This finding also could mean that nursing faculties are doing a poor job at relating what they are actually doing in their classrooms at least as evidenced in their syllabi. An additional consideration is those faculties are just not including learner-centered experiences to improve student development.

The CC Domain items scored in the ‘minimal’ propensity range for being learning-design centered. This finding is interesting in that historically, this is not something that is new. Benefits of collaborative learning are purported in works during the last century by early education pioneers such as Dewey (1963) and Vygotsky (Pass, 2004). Recently, benefits of collaborative experiences are noted throughout contemporary literature with helping students build the

knowledge skills and know-how through collaborative experiences (Kraemer, 2005; Liechty et al., 2009; Albertine, 2012; Matoba et al. 2007). The implication of this finding is nursing faculty are doing a poor job employing collaboration and need to consider adding more of these experiences as a way to improve student development. Why these types of learning experiences are not being used may refer back to faculty lack of understanding of theoretical benefits of collaborative experiences.

Lastly, the KC Domain items scored in the ‘minimal’ propensity range for being learning-design centered. Bransford et al. (2000) relate that knowledge-centered environments should strive to provide students a depth of study to help develop a memory base. This is important to be able to work within systems fluidly. The implication of this finding is nursing faculty are not providing these types of avenues to improve student development of knowledge. One reason why this may be the case is that, again, most individuals entering faculty work have limited or no knowledge of pedagogy towards improving student retention of knowledge.

The Individual CIs

A final analysis in RQ 1 dealt with evaluation for propensity of syllabi to be learning-centered within the individual CIs. Results indicated all items scoring at either the ‘moderate’ or ‘minimal’ propensity levels. The items that scored highest on the propensity level included CI 3 Course Goals / Objectives and CI 10 Evaluation, both of which were at the ‘moderate’ level. The items that scored lowest in propensity included CI 11 Revisioning, CI 5 Need for Knowledge, and CI 2 Conceptual and Cultural Knowledge Building. These items scored at the ‘minimal’ propensity level.

What appears noteworthy about these results is that even though employment of learning-centered teaching (LCT) approaches are purported as necessary to enhance student learning

(Bransford et al., 2000; Colley, 2012; Doyle, 2011; Grunert O'Brien et al., 2008; Huba & Freed, 2000; Kantor, 2009; Kleiman, 2007; Pardue, 2006; Schaefer & Zygmunt, 2003; Steiner et al., 2010; Weimer, 2002), these design practices are apparently limited in their employment. A couple of reasons for this might be lack of educational experience in pedagogy and learning theory and personal belief in how people learn. Additionally, since the syllabus is considered an important document to student and faculty alike (Blumberg & Pontiggia, 2011; Cullen & Harris, 2009; Eberly et al., 2001) and if optimal student learning is the ultimate goal for students, then it would seem to behoove course instructors to report all aspects of design within their course syllabi. As a way forward towards being more learning centered in design, faculty members need to expressly include more learning-centered facets in their class and should report on these in course syllabi so they are apparent to interested parties.

Research Question 2

Is there a difference between nursing programs at Public Doctorate-granting Universities versus Public Master's-granting Colleges and Universities when nursing didactic course syllabi are evaluated for being learning centered?

For RQ 2 public nursing programs were divided into ones that either offered doctoral degrees or not and were analyzed. Programs were labeled according to the following scheme: Institutions offering a degree through a Master's will receive a "1" and institutions offering a degree through a Doctorate will receive a "2." RQ 2 was intended to ascertain whether there was a relationship between the two groups. There were six 'Public Doctorate-granting Universities' and 10 'Public Master's-granting Colleges and Universities' which were analyzed for differences overall differences, within the four domains, and within the individual CIs.

Overall

As for results of overall differences, an Independent Samples Kruskal-Wallis nonparametric test found no statistically significant difference in the LED-RS scores of nursing didactic course syllabi between ‘Public Doctorate-granting Universities’ versus ‘Public Master’s-granting Colleges and Universities.’ The sample of master’s granting institutions and doctoral granting institutions had scores more similar than different. Both scored in the marginal propensity level for being learning centered. A reason for this finding may be that faculty members at both institution types tend to do a poor job at including learning-centered design in their courses and syllabi. It may be the case that faculties actually use LED, but they are not representing this in their syllabi. As a way forward, faculty at the two institution types need to work at increasing learning-centered aspects to their classrooms and syllabi.

The Four Domains

As for the four domains, Independent Samples Kruskal-Wallis nonparametric tests only identified a statistically significant difference between institution types in the LC Domain. In this analysis, Master’s-granting institutions scoring at the ‘moderate propensity’ level had more propensity for being learning-centered than Doctoral-granting institutions scoring at the ‘minimal propensity’ level. Additionally, the mean rank for Master’s institutions is almost two-thirds higher than doctoral institutions. This being the case, Master’s-granting institutions consider students’ backgrounds including culture, prior knowledge, and their strengths and needs in learning at higher levels when compared to doctoral ones. One plausible reason for this finding may be the focus of the institution type. Doctoral institutions would seem to focus more so on research whereas master’s institutions would focus more so on teaching. If this is the case, then this would seem to be a reason for master’s institutions outperforming doctoral ones.

What needs consideration is whether the difference is of meaningful significance. Upon looking at the scale in scoring (0-3), the appreciable difference seems rather small with Master's institutions scoring at the low end of moderate propensity and Doctoral institutions scoring near the high end of the minimal propensity level. The implication of the results either way is that faculty at both institution types need to work on becoming more learner-centered by adding more LC items.

The Individual CIs

Lastly, all CIs were evaluated between the Master's and Doctoral groups. Independent Samples Kruskal-Wallis nonparametric tests indicated statistically significant differences existed between institution types on two of the individual CIs. First, significant differences were found for CI 4 (Teaching Practices). Master's-granting institutions were found to be at the 'moderate' level and have more propensity for expressing more learning practices than Doctoral institutions which were at the 'minimal' level. In the 'moderate' level, the syllabus presents a list or description of teaching practices to be employed in the course and the majority of teaching practices are amenable to being diagnostic rather than delimiting measurements *i.e. they attempt to discover what students think in response to the problems at hand*. In the 'minimal' level the syllabus presents a list or description of teaching practices to be employed in the course, but teaching practices are limited in type, predominately involving passive methods such as the instructor telling information to the students. A plausible reason for difference may be that master's institutions have a more dedicated focus on teaching when compared to doctoral programs which have a differing focus on research.

This finding is felt to be meaningful and significant in that multiple pedagogies allow the engagement of various learning strengths and development of differing problem solving

strategies (Doyle, 2011). Although Master's granting institutions are still low, their score is almost double that of Doctoral Granting institutions. Both have a ways to go toward scoring higher in the area of learning practices, but Doctoral institutions have a much farther distance.

Second, significant differences between institution types were found for CI 13 (Collaboration). Even though both institution types scored within the 'minimal' propensity level, Master's-granting institutions had statistically significant more propensity for collaborative experiences than Doctoral institutions. In the 'minimal' level, the syllabus presents that students are encouraged to assist one another during class assignments, but the majority of assignments are designed to be completed on an individual basis with limited peer collaboration. Also, no explanation is offered as to the purpose of collaborative class assignments.

This finding is felt to be meaningful even though both institutions score within the minimal level range. A possible reason for this finding is that again Master's institutions would have more of a focus of teaching as opposed to doctoral institutions by the very nature of institutional focus. Master's institutions would be more so focused on teaching and doctoral programs would be more so focused on research. The implication of this finding is that both institution types have a way to go towards improving collaborative experiences within courses, but this is especially true for Doctoral institutions. Additionally, what can be noted here is a trend emerging where there is difference between Masters granting institutions versus Doctoral Granting institutions, with favor on the side of Master's institutions.

Research Question 3

Is there a difference between the faculty characteristic of degree held and propensity for nursing didactic courses being learning centered?

RQ 3 was intended to ascertain whether there was a statistically significant difference in the relationship between the faculty characteristic of degree held and the learning-centeredness of syllabi. Differences were explored in the following three areas: (1) Overall, (2) The Four Domains, and (3) The Individual CIs. Faculty groups were labeled according to the following scheme: Identifiers for the faculty degree were entered for the lead instructor of the course as noted on the syllabus. There are differences in degree by years of study required and by focus. A DNP received a “1.” A DNP or Doctor of Nursing Practice is a two to four year practice doctorate offered in the field of nursing. This is a practice oriented degree and not a research oriented one. The focus of this degree is learning what is in the literature to practice evidence based nursing. A PhD received a “2.” A PhD is a Doctor of Philosophy degree and is a research focused degree. After required coursework, an expectation is for students to carry out an independent study. An EdD received a “3.” An EdD is a Doctor of Education degree and can be either a practice degree or a research focused degree. After required coursework, an expectation is for students to carry out an independent study or a project depending on the institution of higher learning where received. A MSN received a “4.” A MSN is a Master’s degree in nursing. The focus of this degree is on developing advanced nursing education in regards to theory and skill development to continue practicing in the nursing field. A faculty member with an unlisted degree received a “5.” A faculty member with a non-nursing degree received a “6.” If no primary instructor was noted, then that individual received a “7.” These identifiers were used to try to account for all possible deviations. In the analysis, there was only one syllabus linked to an EdD and one syllabus linked to a faculty member with a non-nursing degree. These two syllabi were excluded from RQ 3 calculation due to small sample size.

Overall

As for results of overall differences, an Independent Samples Kruskal-Wallis nonparametric test found no statistically significant differences in the overall LED-RS scores of nursing didactic course syllabi between the differing degrees held by faculty as reported on syllabi. Syllabi from 'DNPs,' 'PHDs,' 'MSNs,' 'Unknown degrees,' and 'No Primary Instructor Noted' were more related than different. Possible reasons for no difference noted might be a general lack of knowledge of LED, a focus more so on clinical practice within nursing programs, a culture within the department or program that tends to support traditional methods of teaching over learning centered methods, or a general lack of inclusion of learning design practice in nursing education programs. Overall, this finding appears significant in that it relates that pretty much all faculty degree types included in this study could benefit from increasing the learning-centeredness of their course syllabi and courses.

The Four Domains

As for the four domains, Independent Samples Kruskal-Wallis nonparametric tests conducted on LED-RS domains appeared to identify a statistically significant difference between faculty degree types in the AC Domain only. The AC domain specifically relates to learning environments that are focused on assessing student knowledge. An important aspect of this domain is to make students' ideas and judgments visible (Bransford et al., 2000). This allows faculty to provide students with opportunities to see their own evolution, modify and develop their own reasoning, and receive remediation from teachers when necessary (Bransford et al., 2000). Another aspect of this domain is need for appraisal designed into instruction (Bransford et al., 2000). Formative and summative assessments are helpful for informing student and faculty where refinements may need to be made.

Kruskal-Wallis pairwise comparisons of faculty in the AC domain revealed syllabi of individuals with DNPs appeared to have more propensity for being assessment-centered than syllabi of individuals having No Primary Instructor Noted. Syllabi of DNPs scored at the moderate level while syllabi of No Primary Instructor noted scored at the minimal level. A possible reason for this difference is that someone has ownership of the class. What I mean here is syllabi could be written by anyone to meet the basic format required by the institution. Having ownership of a class would mean that an individual places his or her name on the syllabus and is responsible for the content within. This argument should mean that all syllabi with assigned faculty members should appear different when compared to syllabi with No Primary Instructor Noted, but that is not the case. The finding that an instructor of record makes a difference regarding the propensity to be AC needs further investigation. It could be that differences may or may not be noticeable as sample size increases. Further study of this phenomenon is needed.

The Individual CIs

As for CIs, Independent Samples Kruskal-Wallis nonparametric tests were conducted to ascertain whether statistically significant differences existed between LED-RS scores on syllabi and faculty degree types. Significant differences between degree types were found in CI 8 (Competency and Mastery) and CI 10 (Evaluation).

CI 8 (Competency and Mastery) identifies whether assignments are designed to promote competence or mastery through learning strategies such as exploration, explanation, and self-evaluation of progress and whether teaching and evaluation practices appear to support this outcome. Kruskal-Wallis pairwise comparisons identified two significant interactions. Syllabi of individuals with 'Unknown' degrees had more propensity for revealing ways of helping students achieve competency and mastery than syllabi of individuals having either 'PhD' or 'MSN'

degrees. A possible reason for the difference is that someone has ownership or responsibility for the class. As noted in the former section, this argument should mean that all syllabi with assigned faculty members should appear different when compared to syllabi with an Unknown Degree, but that is not the case. The finding needs further investigation. Why individuals omit their credentials on syllabi is puzzling. It may be that this is standard operating procedure at particular institutions, but in the spirit of learning centered design, attaching one's name to a syllabus would be more helpful to students and others interested in the class. A larger sample sizes is needed to make a more conclusive finding. It could be that differences may or may not be noticeable as sample size increases. Additionally, any future study should consider joining the two categories, no instructor noted and not degree noted, into one category. Further study of this phenomenon is needed.

CI 10 (Evaluation) evaluated how the syllabus includes formative and summative evaluations, whether multiple types of evaluation were noted (>2) including ones related to practical problems in the field, and whether opportunity was provided to review results of evaluations for assignment feedback. Syllabi with either 'DNPs' or 'MSNs' as faculty appeared to have more propensity for evaluation opportunities than syllabi with a primary instructor, but no degree noted. One possible reason for this finding may be that faculty members in charge of courses may be more learning centered is telling of the importance of using various types of evaluations. The finding that an instructor's degree of record makes a difference regarding the propensity to be learning centered needs further investigation. A larger sample sizes would assist in making a more conclusive finding. Additionally, any future study should consider joining the two categories, no instructor noted and not degree noted, into one category. Further study of this phenomenon is needed.

Research Question 4

Are certain nursing didactic courses more learning-centered than others?

RQ 4 was intended to ascertain whether individual course syllabi types could be identified as more learning-centered and therefore might lend themselves to further analysis. Syllabi were evaluated in the following areas: (1) Overall, (2) The Four Domains, and (3) The Individual CIs.

Overall

Overall, courses averaged in the ‘minimal’ propensity level for being learning centered. This finding is consistent with the grand mean from RQ 1 where overall syllabi score at the minimal level for being learning design centered. When looking at the individual course breakdown, there were three courses that scored in the moderate propensity level for being learning centered. These courses were Community / Public Health Nursing, Management /Leadership Nursing, and Geriatric Nursing respectively. These courses had more representation of learning centered design within them. A few reasons for this finding may be that these courses are less content heavy when compared to courses such as Adult Health 1 / Common Concepts 1, Obstetric Nursing, and Nursing Pathophysiology which scored at the minimal propensity level. Second, faculty teaching these courses may use more groups and case examples since they appear more conducive to the course mode of teaching.

The remaining courses scored in the ‘minimal’ level for being learning-centered. The courses that scored the lowest were Adult Health 1 / Common Concepts 1, Obstetric Nursing, and Nursing Pathophysiology. A reason for this result could be that the faculty member is not using learning-centered design in his or her courses. A second reason might just be that the faculty needs to reflect what they are actually doing in their courses in their respective syllabi.

Overall, implication of these findings are important in that they signify that there is the need for faculty across courses, who are seeking to become more learning-design-centered, to involve more LED into their courses.

The last component of this comparison was to look for significant overall differences between courses. The one-way ANOVA *Welch F* test appeared to identified a significant difference. The estimated omega squared indicated that approximately 35.4 % of the total variation in average LED-RS scores is attributable to differences between course types. Although a Games-Howell post hoc analysis identified a possible difference between two courses, nursing pathophysiology and geriatric nursing, a follow-up Pillai's Trace did not indicate a significant difference. The Pillai's Trace finding of no difference was found to conflict with the ANOVA. It is felt that this is more than likely due to the small sample size.

The Four Domains

As for the four domains, Independent Samples Kruskal-Wallis nonparametric tests were conducted on syllabi in the LC, KC and AC domains. Results appeared to identify a statistically significant difference in the LED-RS scores in the KC domain between courses. The KC domain specifically relates to learning environments that focus on “what is taught (information, subject matter), why it is taught (understanding), and what competence or mastery looks like” (Bransford et al., 2000, p. 24). Further, these environments should strive to offer “the necessary depth of study, assessing student understanding rather than factual memory” (Bransford et al., 2000, p. 24) and as Brunner relates, “[takes] seriously the need to help students become knowledgeable by learning in ways that lead to understanding and subsequent transfer” (Bransford et al., 2000, p. 136). These environments need to engage metacognition, reflective practices to enhance learning. A central focus should be on “encourage[ing] doing with

understanding,” (Bransford et al., 2000, p. 24). Pairwise comparisons using the Kruskal-Wallis test though did not reveal significant differences between groups at the .05 significance level. This is probably due to small sample size for each of the course types. No one course had a sample size of greater than 15 syllabi.

The CC domain data were parametric and a one-way ANOVA was used to assess differences. The CC domain specifically relates to learning environments that are focused on the benefits of community interaction in learning for students. As noted, a CC approach to LED requires intent on part of the professor to develop “norms for the classroom and school, as well as connections to the outside world, [i.e. the broader community, and supports] core learning values” (Bransford et al., 2000, p. 25). If students are to identify their preconceptions about subject matter, explore pressing questions, and monitor their progress toward understanding, then the norms within the class must support their doing so. Teachers must design classrooms pursuits to help “students organize their work in ways that promote the kind of intellectual camaraderie and the attitudes toward learning that build a sense of community” (Bransford et al., 2000, p. 25).

Results in the CC Domain analysis indicated a statistically significant difference between groups on standardized testing. A Tukey post hoc comparison test indicated that there was a significant difference between courses. The difference was found between Management / Leadership Nursing courses being more community centered than Adult Health 1 / Common Concepts 1 courses. The Management / Leadership course scored in the ‘moderate’ propensity level for being CC. The Adult Health 1 / Common Concepts 1 course scored in the ‘minimal’ propensity level for being CC. This finding is consistent with the findings in overall differences between courses and similar reasons exist as to why this may be the case. These reasons would

be these courses are less content heavy and that faculty teaching these courses may use more group work and case examples since they appear more conducive to the course mode of teaching.

The Individual CIs

As for the CIs, Independent Samples Kruskal-Wallis nonparametric tests identified significant differences between course types in CI 5 (Need for Knowledge) and CI 7 (Engagement and Doing). CI 5 (Need for Knowledge) evaluated the syllabus for evidence of active learning in factual knowledge development. Further, this CI sought to identify whether the syllabus relates that facts need to be connected and reinforced for understanding and whether assignments and assessments are designed to promote the application of knowledge for deeper learning. Kruskal-Wallis pairwise comparisons appeared to indicate several statistically significant differences. One course in particular stood out in the results. Community / Public Health Nursing had more propensity for expressing a need for knowledge is important for students when compared to Fundamentals of Nursing courses, Adult Health 1 / Complex Concepts 1 courses, Adult Health 2 / Complex Concepts 2 courses, Mental Health Nursing courses, Nursing Pharmacology courses, and Management / Leadership Nursing courses. This finding sheds some light on the finding in RQ 1 where nursing classes as a whole score in the 'minimal' propensity level for being KC. One reason for this finding might be the way that faculty teaching these courses deliver the content. They may use more knowledge focused examples which may be standard in this area of nursing education. An implication of this finding is that Community / Public Health courses could be used as models to improve other courses which need more evidence in the 'Need for Knowledge' category.

Finally, CI 7 (Engagement and Doing) was created to evaluate the syllabus for descriptions of projects that require students to engage each other to solve problems inside and

outside of classroom settings. Further, the item requires that problems which are dealt with appear to be real-world in nature and encourage hands on doing with understanding. Projects are not merely task oriented as students are encouraged to bring additional knowledge to class through discussions. Creation of artifacts of learning (e.g. poster, paper, or oral presentations) is also required. Independent Samples Kruskal-Wallis nonparametric test appeared to indicate a statistically significant difference on scores between two course types. Pairwise comparisons appeared to indicate statistically significant differences with a finding that Management / Leadership Nursing courses had more propensity for engagement and doing than Nursing Pathophysiology courses. One reason for this finding might be the way that faculty teaching these courses deliver the content. They may use more engagement and doing examples such as cases and creative type projects which may common to faculty in this area of nursing education. An implication of this finding is that Management / Leadership Nursing courses could be useful as models for instructors to increase engagement and doing practices in their courses.

Study Limitations

There are several limitations of this study to consider. The first limitation is that this study only evaluates course syllabi as the proxy for learning design within courses. Just because something is stated, this does not mean that it is actually carried out in the classroom. Likewise, just because something is not stated does not mean that the converse is true. This does not excuse the absence of best learning practices from the syllabi, but it might play into future policy implications.

Second, this is a first attempt at developing and testing an instrument that measures learning environment design centeredness in a syllabus. Iterations of the LED-RS might improve the specificity of the instrument.

The third limitation involved the access procedure for obtaining syllabi. Under the 2009 Texas House Bill 2504: Sec. 51.974, schools are to make available certain aspects of courses to the public (<http://www.statutes.legis.state.tx.us/Docs/ED /htm/ED.51.htm#51.974>). This author was not able to ascertain all syllabi by using this method.

A fourth limitation is the limited number of syllabi for each class type for evaluation and comparison. With a larger sample size of each course, subtle differences may be more readily apparent by statistical analysis. To achieve a higher number of syllabi, faculty could be emailed at schools of nursing across the country.

A fifth limitation is that the findings can only be generalized to the sample of public BSN nursing programs from Texas included in this study. Addition of syllabi from private institutions and those from the public programs not represented in this project e.g. Associate degree nursing programs, would increase the generalizability to nursing programs throughout the State of Texas.

Implications

Several implications can be concluded from this project. One of the main implications of this research is that it highlights that nursing education has a wide gap between what is preached and what is actually performed in practice. From these results it appears that syllabi are not aligned or at least not clear that they are aligned with the principles of learning. Either way this is problematic because clarity is important in the process of teaching and learning design.

Continued reliance on teacher-centered educational practices (Candela, Dalley, & Benzell-Lindley, 2006; Doyle, 2011; Stanley & Dougherty, 2010; Weimer, 2002) and lack of basic knowledge in learning environment design (Fink, 2003) are noted as two issues which continue to perpetuate an educational system where students develop knowledge bases replete with disconnected facts and lacking in deep understanding of content.

A second implication this research has for the field of nursing is that it provides a validated and reliable instrument for faculty to use to assess how well their explicitly stated curriculum, via syllabi, are aligned with learning principles. Faculty members across the country strive to provide quality nursing education to tens of thousands of students each semester. It is not only important, but imperative that these learning experiences be designed for optimal learning. As noted in the literature, errors in judgment have led to death of patients (Kohn, Corrigan, & Donaldson, 1999). Therefore, if errors in judgment are can be amended through learning-centered education, then patient death need not be the case.

Third, another benefit of the LED-RS is that the instrument can provide current faculty members a framework to follow when developing syllabi focused on learning environment design. One of the hopes for this project was to develop an easy and usable instrument that can influence educator and future nurse educator practice.

Next, this project has implications for future research endeavors. It provides statistically significant results from which comparison studies focusing on learning environment design can be performed. Additionally, researchers developing instruments similar to the one designed for this study could use the LED-RS in their research process to establish criterion validity for their instrument. Results concluded from instrument use could be useful for researchers considering where to start when trying to add to the body of knowledge in nursing education.

Lastly, as for graduate faculty and student use, faculty of graduate nurse educator programs could use the LED-RS with graduate nurse educator students in the form of an assignment to help them learn the importance of learning environment design. In addition to using the rubric to help design syllabi, students could gain understanding of the NRC framework including the learning design perspectives (Bransford et al., 2000).

Future Research Considerations

The conclusions from this research project offer several opportunities for researchers, educators, and students in the field of nursing. Several research studies could extend our understanding of the extent of learning design practices in nursing education. Using of the findings from this dissertation as a base of knowledge and understanding should aid this process.

One such study could include incorporating different type nursing programs e.g. practical nursing programs, associate degree nursing programs, and graduate level programs, etc., in an analysis of syllabi for being learning centered. This study would broaden the understanding of the extent of LED practice.

Another project could investigate differences among faculty and their educational backgrounds. One such study might include evaluating syllabi among individuals who had backgrounds, in some form or fashion, in (nursing) education, specifically e.g. Certified Nurse Educator (CNE) (<http://www.nln.org/certification/>) or a graduate degree in education. This type of study might lend some insight as to whether individuals with knowledge of education practices might design syllabi which tend to be more learning centered or not.

A third follow-up study could investigate nursing faculty understanding of learning environment design practices. A survey regarding each of the learning design principles could be developed and an open text option could be used to gather a faculty perspective of knowledge and understanding in specific areas such as learner-centeredness, assessment-centeredness, knowledge-centeredness, and community-centeredness.

A fourth project could investigate Master's programs having a nursing education content focus and the extent of coverage of learning environment design content within the program's

curriculum. This might be helpful to identify what is and is not covered and offer ideas to bolster this area within curriculum.

A fifth study could investigate syllabi of non-nursing departments on LED-RS scores and compare the results to nursing syllabi LED-RS results. This would be helpful in identifying whether lack of design in course development practice is unique to nursing or is a systemic issue.

A sixth project could investigate syllabi at research intensive institutions versus regional comprehensive institutions as to whether differences exist in learning-centeredness. This would be helpful in teasing out whether faculty research obligations impact or not the propensity for courses being learning centered.

A seventh project could investigate whether there is any interaction between LED propensity of a school's syllabi and a school's national nursing exam pass rates. This would be helpful in identifying whether LED impacts success or not on board exam rates and possibly influence course design practices.

Conclusion

Scientific discovery and societal demands require change in the nurse education process to better prepare nurses entering the workforce (NLN, 2005). Currently, literature in nursing regarding the adoption of learning-centered design into nursing education practice is limited. What can be identified in the literature is that LC pedagogies which follow adult learning principles enhance the learning of students and are recognized as essential in assisting students to develop the sense of adaptability and salience required to practice as new nurses (Benner et al., 2010).

The intent of this dissertation was to help develop an avenue for faculty transition to a more learning-centered approach in teaching. This dissertation identified several key issues nurse

educators need to consider regarding course design. To accomplish the goals set out in this dissertation, the LED-RS was developed and evaluated as a way to help faculty more thoroughly consider syllabus and course design practices. The LED-RS and findings of this dissertation should provide a way forward for faculty who are interested in being creative in their educational offerings and in their learning environment design practices. Lastly, the hope is these findings will cause nursing faculty to pause and consider the importance of including the principles of learning when designing future learning environments for their students.

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APPENDICES

Appendix A

Learning Environment Design Rubric for Syllabi (LED-RS)

Learning Environment Design Rubric for Syllabi (LED-RS)

Directions

The LED-RS assesses college / university course syllabi for evidence of learning environment design practices. The rubric is intended for use with courses delivered in a face-to-face manner. The LED-RS assesses four broad topic perspectives or domains necessary in design for learning environments. These include the (1) learner-centered domain, the (2) knowledge-centered domain, the (3) assessment-centered domain, and the (4) community-centered domain. Each of the topic domains is further separated into specific content items. The cells in each of the content areas contain descriptions / statements regarding the specific content item. These descriptions / statements represent increasing levels of design and comprehensiveness ascribed to the specific content item.

Scoring

The instrument is setup as a four-level rubric. Each content item LED-RS allows the evaluator a choice of four scores from which to choose. Specifically, one may assign a score of “0”, “1”, “2”, or “3” based on an increasing propensity for each content area to represent learning environment design. Receiving a point total of “0” in any content item equates to no propensity / unacceptable with no evidence of components for that content area. Receiving a point total of “1” in any content item equates to minimal propensity / unacceptable with minimal evidence of components for that content area. Receiving a point total of “2” in any content item equates to a moderate propensity / acceptable with moderate evidence of components for that content area. Receiving a point total of “3” in any content item equates to a high propensity / acceptable with maximum evidence of components for that content area.

Scoring Sheet

1. ____
2. ____
3. ____
4. ____
5. ____
6. ____
7. ____
8. ____
9. ____
10. ____
11. ____
12. ____
13. ____
14. ____

Total (equals the addition of all results from content areas 1 through 14) ____ ÷ 14 = ____

The following totals equate to the potential for being learning environment design centered:

- A total of 0 points equals no propensity / unacceptable with no evidence of components
- A total of .01 to .99 equals an overall minimal propensity / unacceptable with minimal evidence of components
- A total of 1.0 to 1.99 equals an overall moderate propensity / acceptable with moderate evidence of components
- A total of 2.0 to 3.0 points equals an overall high propensity / acceptable with maximum evidence of components

Topic Domains	Content Items	Propensity Levels			
		No Propensity	Minimal propensity	Moderate propensity	High propensity
Learner-Centered		0 Point	1 Point	2 Points	3 Points
	1. Cultural Basis Acknowledgement	The university course description <u>is not</u> present.	The university course description <u>is</u> present.	The university course description is present; - and - An additional statement is provided that links the course to the broader curriculum, mission, <u>or</u> outcomes of the program, college and university.	The university course description is present; - and - An additional statement is noted which links the course and its outcomes to the broader mission <u>and</u> outcomes of the program, college, and university; - and - An additional statement is present that the teaching practices strive to be culturally responsive, appropriate, compatible, and relevant to students, <i>i.e. the statement relates to seeking to identify student's cultural practices or ideas as a locus for beginning instruction for students to gain insight.</i>

		0 Point	1 Point	2 Points	3 Points
	2. Conceptual and Cultural Knowledge Building	Syllabus <u>does not</u> offer a statement describing the importance of conceptual and cultural knowledge to the understanding of topics.	Syllabus offers a <u>vague statement</u> about the importance of conceptual and cultural knowledge to the understanding of topics. - and - The statement includes 1 of the following descriptors: (1) offers ties of this class to previous coursework; (2) offers the student choice / autonomy to explore course content; (3) offers how class content and assessment will build upon previous knowledge to promote learning related to the topic.	Syllabus offers an <u>in-depth statement</u> describing the importance of conceptual and cultural knowledge to the understanding of topics. - and - The statement includes 2 of the following descriptors: (1) offers ties of this class to previous coursework; (2) offers the student choice / autonomy to explore course content; (3) offers how class content and assessment will build upon previous knowledge to promote learning related to the topic.	Syllabus offers an <u>in-depth statement</u> describing the importance of conceptual and cultural knowledge to the understanding of Topics. - and - The statement includes all 3 of the following descriptors: (1) offers ties of this class to previous coursework; (2) offers the student choice / autonomy to explore course content; (3) offers how class content and assessment will build upon previous knowledge to promote learning related to the topic.

		0 Point	1 Point	2 Points	3 Points
	3. Course Goals / Objectives	Course Goals / Objectives <u>are not</u> present in syllabus.	Course Goals / Objectives <u>are</u> present in syllabus; -but- Goals / Objectives appear unclear and/or abstract as to what the student will achieve by completing the course.	Course Goals / Objectives are present in syllabus; -and- Goals / Objectives appear <u>somewhat</u> clear, more detailed, but with minimal evidence as to what the student will achieve by completing the course.	Course Goals / Objectives are present in syllabus; -and- Goals / Objectives appear clear and detailed with evidence as to what the student will achieve by completing the course. <i>e.g. one can note the broad understanding of the subject matter including knowledge, skills, attitudes, and beliefs which will be assessed.</i>

		0 Point	1 Point	2 Points	3 Points
	4. Teaching Practices	<p>Syllabus does not list or describe teaching practices employed in the course. <i>e.g. lecturing, assigned readings, one-to-one instruction, self-instruction, role-modeling and role-playing, simulation, gaming, group discussion, writing responses, etc.</i></p>	<p>Syllabus presents a list <u>or</u> description of teaching practices to be employed in the course; - and - Teaching practices are limited in type, predominately involving passive methods such as the instructor telling information to the students.</p>	<p>Syllabus presents a list <u>or</u> description of teaching practices to be employed in the course; - and - Majority of teaching practices are amenable to being diagnostic rather than delimiter measurements <i>i.e. they attempt to discover what students think in response to the problems at hand.</i></p>	<p>Syllabus presents a list <u>and</u> description of teaching practices to be employed in the course; - and - Majority of teaching practices are diagnostic rather than delimiter measurements <i>i.e. they attempt to discover what students think in response to problems at hand;</i> - and - Syllabus further relates that the teaching practices will be useful for identifying and sensitively discussing student misconceptions, and providing further situations to extend student thinking thereby enabling students to readjust their previous ideas.</p>

Knowledge -Centered					
		0 Point	1 Point	2 Points	3 Points
	5. Need for Knowledge	Syllabus does not describe the need for knowledge of facts as necessary.	Syllabus states / describes the importance of factual knowledge.	Syllabus states / describes the need for active learning in factual knowledge development; - and - Syllabus relates that facts need to be connected and reinforced for understanding.	Syllabus states / describes the need for active learning in factual knowledge development; - and - Syllabus relates that facts need to be connected and reinforced for understanding; - and - Syllabus relates that assignments and assessments are designed to promote the application of knowledge for deeper learning.

		0 Point	1 Point	2 Points	3 Points
	6. Metacognitive Practices and Sense-making	No metacognitive teaching practices are present.	Metacognitive practices are encouraged, but not required.	Metacognitive practices are required; - and - Examples of practices are noted with or without an evaluation process <i>i.e. rubrics</i> . Examples may include reflection, post-assignment reflection and / or self-evaluation.	Metacognitive practices are required; - and - Examples of practices are noted and an evaluation process <i>i.e. rubrics</i> . Examples may include reflection, post-assignment reflection and / or self-evaluation. - and - There is <u>specific mention</u> of the practice of reflection on instructor and/or peer feedback regarding assignments designed into the class as an activity to improve sense-making abilities.

		0 Point	1 Point	2 Points	3 Points
	7. Engagement and Doing	Syllabus does <u>not</u> offer any tasks or projects to be employed in the course.	Syllabus offers that tasks or projects will be required of students; - and - The creation of an artifact of learning <i>e.g. poster, paper, or oral presentation, etc.</i> , <u>may or may not</u> be noted.	Syllabus offers that tasks or projects will be required of students, - and - The creation of an artifact of learning <i>e.g. poster, paper, or oral presentation, etc.</i> , is noted and required; - and - The problems which are delineated appear to only be <u>theoretical</u> in nature only. No discussion of relation to real-world issues.	Syllabus offers that tasks or projects will be required of students, - and - The creation of an artifact of learning <i>e.g. poster, paper, or oral presentations, etc.</i> , is noted and required; - and - The problems which are delineated appear to incorporate <u>theoretical and real-world</u> issues and further encourages hands on doing with understanding.

		0 Point	1 Point	2 Points	3 Points
	8. Competency and Mastery	Syllabus does <u>not</u> identify assignments that are designed for students to achieve competence or mastery.	Syllabus identifies assignments are designed to promote competence or mastery through learning strategies such as exploration, explanation, and self-evaluation of progress. - but - Teaching practices <u>are not present</u> or <u>do not</u> appear to support this outcome. - and - Evaluation practices <u>are not present</u> or <u>do not</u> appear to support this outcome.	Syllabus identifies assignments are designed to promote competence or mastery through learning strategies such as exploration, explanation, and self-evaluation of progress; - and - Teaching practices appear to support this outcome. - but - Evaluation practices <u>do not</u> appear to support this outcome.	Syllabus identifies assignments are designed to promote competence or mastery through learning strategies such as exploration, explanation, and self-evaluation of progress; - and - Teaching practices appear to support this outcome; - and - Evaluation practices appear to support this outcome.

Assessment -Centered					
		0 Point	1 Point	2 Points	3 Points
	9. Course Assignments	No course assignments noted in syllabus. <i>e.g. discussion boards, problem sets, case studies, projects, short papers, etc.</i>	List of course assignments present - but - Limited types of assignments noted (≤ 2) - but - Limited or no explanation given regarding the purpose of the assignments.	List of class assignments present - and - Multiple types of assignments noted (≥ 3); - but - Limited or no explanation given regarding the purpose of the assignments.	List of class assignments present - and - Multiple types of assignments noted (≥ 3); - and - Detailed explanation given regarding the purpose of the assignments including how each will foster development of interpersonal skills in mastery of course content, and further that they allow the instructor to grasp the students' preconceptions as a way to guide students in learning.

		0 Point	1 Point	2 Points	3 Points
	10. Evaluation	<p>No evaluation methods noted in syllabus. <i>e.g. quizzes, papers, presentations, midterm exam and final exam or final exam only, etc.</i> - and -</p> <p>No opportunity provided to review results of evaluations and/or for assignment feedback.</p>	<p>Syllabus includes only <u>summative</u> evaluation(s); - with -</p> <p>Single type of evaluation noted only. - and -</p> <p>Opportunity <u>may be</u> provided to review results of evaluations and/or for assignment feedback.</p>	<p>Syllabus includes both <u>formative</u> and <u>summative</u> evaluations; - and -</p> <p>Multiple types of evaluation noted (≥ 2) - and -</p> <p>Opportunity <u>may be</u> provided to review results of evaluations and/or for assignment feedback.</p>	<p>Syllabus includes both <u>formative</u> and <u>summative</u> evaluations. - and -</p> <p>Multiple types of evaluation noted (≥ 2) including ones related to practical problems in the field - and -</p> <p>Opportunity <u>is</u> provided to review results of evaluations and/or for assignment feedback.</p>

		0 Point	1 Point	2 Points	3 Points
	11. Revisioning	Redoing of assignments <u>not</u> offered.	Redoing of select assignments allowed <u>and / or</u> required; - but - No opportunity to improve grade with revision noted.	Redoing of select assignments allowed <u>and / or</u> required; - and - Students are allowed <u>one</u> opportunity to revise; - and - If graded, may improve grade with revision.	Redoing of assignments <u>required</u> and students are encouraged to see personal evolution, modify reasoning, and receive remediation if needed; - and - Students allowed multiple opportunities to revise; - and - If graded, may improve grades with revisions.

Community -Centered					
		0 Point	1 Point	2 Points	3 Points
	12. Class Culture / Norms	Syllabus does <u>not</u> state the culture in regards to learning in the course and the class norms are not discussed.	Syllabus states that classroom culture is based on the premise that one should come to class prepared by having read the assigned readings so as to be ready to engage in class activities and discussions with the instructor and classmates during class; - and - Interaction with others may be <u>encouraged</u> but not required. - but - No statements noted regarding academic risk-taking.	Syllabus explicitly states that the class culture is based on the premise that students should come to class prepared by having read the assigned readings so as to be ready to engage in class activities and discussions with the instructor and classmates during class; - and - Interaction with others is <u>required</u> ; - but - No statements noted regarding academic risk-taking.	Syllabus explicitly states that the class culture is based on the premise that students should come to class prepared by having read the assigned readings so as to be ready to engage in class activities and discussions with the instructor and classmates during class; - and - Interaction with others is <u>required</u> ; - and - A specific statement exists encouraging academic risk-taking <i>e.g. not explicitly knowing all the facts is permissible and is not devalued.</i>

		0 Point	1 Point	2 Points	3 Points
	13.Collaboration	<u>No</u> collaborative class assignments noted.	Students are <u>encouraged</u> to assist one another during class assignments, <u>but</u> the majority of assignments are designed to be completed on an individual basis with <u>limited peer collaboration</u> . - and - No explanation is offered as to the purpose of collaborative class assignments.	Students are <u>required</u> to assist one another during class assignments <u>and</u> group grades are given. - but - No explanation is offered as to the purpose of collaborative class assignments.	Students are <u>required</u> to assist one another during class assignments <u>and</u> group grades are given. - and - Further, the instructor offers that class assignments are purposely designed to promote intellectual camaraderie, encourage students to assist one another to solve problems by building on each other's knowledge, asking questions to clarify explanations, and to develop attitudes that lean toward building a sense of community, <u>and</u> suggesting avenues that would move the group towards its goal.

		0 Point	1 Point	2 Points	3 Points
	14. Contextual Learning	Assignments <u>are not</u> listed.	Assignments <u>are</u> listed.	<p>Assignments are listed;</p> <p>- and -</p> <p>Assignments designed to help students understand <u>theory</u> within the field of study;</p> <p>- but -</p> <p>No engagement of real-world examples or authentic practices noted in the assignments which are listed.</p>	<p>Assignments are listed;</p> <p>- and -</p> <p>Assignments designed to help students <u>understand theory through practical engagement</u> with real-world examples or authentic practices within the field of study.</p>

Appendix B

Institutional Review Board Communique

Office for Research
Institutional Review Board for the
Protection of Human Subjects

March 3, 2014

THE UNIVERSITY OF
ALABAMA
R E S E A R C H

Robert Michael
ELPTS
College of Education
The University of Alabama

Re: IRB Requirement for "Evaluating Nursing Syllabi for
Propensity to Employ Learning Environment Design
Principles"

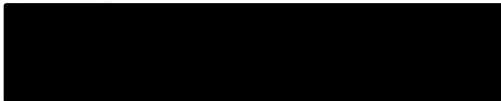
Mr. Michael:

This letter comes as a response to your communication received
February 27, 2014. According to the Office for Human Research
Protection (OHRP) under policy 45 CFR 46.101 the proposed work is
not human subjects research.

Because the work is not considered human subjects research, it does
not require IRB approval and is therefore excluded from review by the
IRB.

If you have any questions or if I can be of further assistance please do
not hesitate to contact me.

Sincerely,



Director of Research Compliance & Research Compliance Officer
Office of Research Compliance
The University of Alabama



358 Rose Administration Building
Box 8701 27
Tuscaloosa, Alabama 35487-01 27
(205) 348-8461
FAX (205) 348-7189
TOLL FREE (877) 820-3066

Appendix C

Table of Answer Frequencies for Individual Content Items in Pilot Study

Table of Answer Frequencies for Individual Content Items in Pilot Study

CI	<i>Propensity Level</i>				<i>N (%)</i>
	<i>None (%)</i>	<i>Minimal (%)</i>	<i>Moderate (%)</i>	<i>High (%)</i>	
CI 1	--	28 (93.3)	2 (6.7)	--	30 (100)
CI 2	28 (93.3)	1 (3.3)	1 (3.3)	--	30 (100)
CI 3	--	4 (3.3)	13 (43.3)	13 (43.3)	30 (100)
CI 4	15 (50)	1 (3.3)	14 (46.7)	--	30 (100)
CI 5	27 (90)	2 (6.7)	--	1 (3.3)	30 (100)
CI 6	26 (86.7)	--	3 (10)	1 (3.3)	30 (100)
CI 7	5 (16.7)	8 (26.7)	6 (20)	11 (36.7)	30 (100)
CI 8	27 (90)	--	--	3 (10)	30 (100)
CI 9	6 (20)	3 (10)	19 (63.3)	2 (6.7)	30 (100)
CI 10	4 (13.3)	2 (6.7)	24 (80)	--	30 (100)
CI 11	25 (83.3)	5 (16.7)	--	--	30 (100)
CI 12	17 (56.7)	7 (23.3)	5 (16.7)	1 (3.3)	30 (100)
CI 13	22 (73.3)	4 (13.3)	4 (13.3)	--	30 (100)
CI 14	7 (23.3)	9 (30)	5 (16.7)	9 (30)	30 (100)

Note. CI = Content Item; N = Number

Appendix D

RQ 1 Table of Answer Frequencies for Individual Content Items

RQ 1 Table of Answer Frequencies for Individual Content Items

CI	<i>Propensity Level</i>				<i>N (%)</i>
	<i>None (%)</i>	<i>Minimal (%)</i>	<i>Moderate (%)</i>	<i>High (%)</i>	
CI 1	3 (3.2)	82 (87.2)	8 (8.5)	1 (1.1)	94 (100)
CI 2	83 (88.3)	11 (11.7)	--	--	94 (100)
CI 3	--	26 (27.7)	50 (53.2)	18 (19.1)	94 (100)
CI 4	44 (46.8)	17 (18.1)	31 (33.0)	2 (2.1)	94 (100)
CI 5	91 (96.8)	1 (1.1)	1 (1.1)	1 (1.1)	94 (100)
CI 6	81 (86.2)	--	12 (12.8)	1 (1.1)	94 (100)
CI 7	41 (43.6)	21 (22.3)	11 (11.7)	21 (22.3)	94 (100)
CI 8	84 (89.4)	2 (2.1)	6 (6.4)	2 (2.1)	94 (100)
CI 9	17 (18.1)	35 (37.2)	39 (41.5)	3 (3.2)	94 (100)
CI 10	6 (6.4)	16 (17.0)	68 (72.3)	4 (4.3)	94 (100)
CI 11	92 (97.9)	1 (1.1)	1 (1.1)	--	94 (100)
CI 12	70 (74.5)	18 (19.1)	6 (6.4)	--	94 (100)
CI 13	60 (63.8)	8 (8.5)	24 (25.5)	2 (2.1)	94 (100)
CI 14	22 (23.3)	28 (30)	19 (20.2)	25 (26.6)	94 (100)

Note. CI = Content Item

Appendix E

RQ 2 Table of Shapiro-Wilk Normality Scores for Domains by Institution Type

RQ 2 Table of Shapiro-Wilk Normality Scores for Domains by Institution Type

Domain	Institution Type	<i>Statistic</i>	<i>df</i>	<i>Sig.</i>
LC	Masters	.949	60	.014
	Doctoral	.831	34	.000*
KC	Masters	.788	60	.000*
	Doctoral	.806	34	.000*
AC	Masters	.890	60	.000*
	Doctoral	.913	34	.010*
CC	Masters	.909	60	.000*
	Doctoral	.895	34	.003*

Note. *. Violated assumption when using alpha = .01

Appendix F

RQ 2 Table of Shapiro Wilk Normality Scores for Content Items by Institution Type

RQ 2 Table of Shapiro Wilk Normality Scores for Content Items by Institution Type

CI	Institution Type	<i>Statistic</i>	<i>df</i>	<i>Sig.</i>
CI 1	Masters	.530	60	.000*
	Doctoral	.322	34	.000*
CI 2	Masters	.427	60	.000*
	Doctoral	.255	34	.000*
CI 3	Masters	.808	60	.000*
	Doctoral	.761	34	.000*
CI 4	Masters	.790	60	.000*
	Doctoral	.679	34	.000*
CI 5	Masters	.158	60	.000*
	Doctoral	.165	34	.000*
CI 6	Masters	.374	60	.000*
	Doctoral	.489	34	.000*
CI 7	Masters	.784	60	.000*
	Doctoral	.787	34	.000*
CI 8	Masters	.442	60	.000*
	Doctoral	.165	34	.000*
CI 9	Masters	.837	60	.000*
	Doctoral	.825	34	.000*
CI 10	Masters	.619	60	.000*
	Doctoral	.755	34	.000*
CI 11	Masters	.110	60	.000*
	Doctoral	.165	34	.000*
CI 12	Masters	.533	60	.000*
	Doctoral	.647	34	.000*
CI 13	Masters	.714	60	.000*
	Doctoral	.528	34	.000*
CI 14	Masters	.857	60	.000*
	Doctoral	.819	34	.000*

Note. *. Violated assumption when using alpha = .01

Appendix G

RQ 3 Table of Shapiro Wilk Normality Scores for Domains by Faculty Degree Type

RQ 3 Table of Shapiro Wilk Normality Scores for Domains by Faculty Degree Type

Domain	Degree Type	Statistic	df	Sig.
LC	DNP	.928	8	.494
	PhD	.827	18	.004*
	MSN	.919	54	.001*
	Unknown	.964	3	.637
	No Primary Instructor noted	.859	9	.094
KC	DNP	.848	8	.090
	PhD	.823	18	.003*
	MSN	.817	54	.000*
	Unknown	.750	3	.000*
	No Primary Instructor noted	.615	9	.000*
AC	DNP	.810	8	.037
	PhD	.918	18	.120
	MSN	.908	54	.001*
	Unknown	.750	3	.000*
	No Primary Instructor noted	.854	9	.083
CC	DNP	.788	8	.021
	PhD	.913	18	.099
	MSN	.865	54	.000*
	Unknown	.750	3	.000*
	No Primary Instructor noted	.901	9	.255

Note. *. Violated assumption when using alpha = .01

Appendix H

RQ 3 Table of Shapiro Wilk Normality Scores for Content Items by Faculty Degree Type

RQ 3 Table of Shapiro Wilk Normality Scores for Content Items by Faculty Degree Type

Content Item	Institution Type	<i>Statistic</i>	<i>df</i>	<i>Sig.</i>
CI 1	DNP	.418	8	.000*
	PhD	.373	18	.000*
	MSN	.462	54	.000*
	No Primary Instructor noted	.693	9	.001*
CI 2	PhD	.457	18	.000*
	MSN	.364	54	.000*
	No Primary Instructor noted	.390	9	.000*
CI 3	DNP	.782	8	.018
	PhD	.780	18	.001*
	MSN	.792	54	.000*
	Unknown	.750	3	.000*
	No Primary Instructor noted	.617	9	.000*
CI 4	DNP	.736	8	.006*
	PhD	.713	18	.000*
	MSN	.745	54	.000*
	Unknown	.750	3	.000*
	No Primary Instructor noted	.564	9	.000*
CI 5	PhD	.253	18	.000*
	No Primary Instructor noted	.390	9	.000*
CI 6	DNP	.566	8	.000*
	PhD	.557	18	.000*
	MSN	.364	54	.000*
	No Primary Instructor noted	.390	9	.000*
CI 7	DNP	.843	8	.082
	PhD	.805	18	.002*
	MSN	.765	54	.000*
	Unknown	.750	3	.000*
	No Primary Instructor noted	.752	9	.006*
CI 8	DNP	.607	8	.000*
	PhD	.253	18	.000*
	MSN	.287	54	.000*
	Unknown	1.000	3	1.000
	No Primary Instructor noted	.390	9	.000*

Content Item	Institution Type	<i>Statistic</i>	<i>df</i>	<i>Sig.</i>
CI 9	DNP	.724	8	.004*
	PhD	.891	18	.040
	MSN	.831	54	.000*
	Unknown	.750	3	.000*
	No Primary Instructor noted	.823	9	.037
CI 10	DNP	.732	8	.005*
	PhD	.520	18	.000*
	MSN	.680	54	.000*
	No Primary Instructor noted	.780	9	.012
CI 11	DNP	.418	8	.000*
	MSN	.119	54	.000*
CI 12	DNP	.566	8	.000*
	PhD	.544	18	.000*
	MSN	.637	54	.000*
	Unknown	.750	3	.000*
CI 13	DNP	.782	8	.018
	PhD	.663	18	.000*
	MSN	.540	54	.000*
	Unknown	.750	3	.000*
	No Primary Instructor noted	.711	9	.002*
CI 14	DNP	.815	8	.041
	PhD	.805	18	.002*
	MSN	.862	54	.000*
	Unknown	.750	3	.000*
	No Primary Instructor noted	.844	9	.065

Note. *. Violated assumption when using alpha = .01

Appendix I

RQ 3 Table of Mean Ranks for Degree Type by Content Item

RQ 3 Table of Mean Ranks for Degree Type by Content Item

Content Item	Degree Type	<i>N</i>	<i>MR</i>
CI 1	DNP	8	38.31
	PhD	18	48.39
	MSN	54	47.70
	Unknown	3	43.50
	No Primary Instructor noted	9	43.78
CI 2	DNP	8	41.50
	PhD	18	49.17
	MSN	54	46.61
	Unknown	3	41.50
	No Primary Instructor noted	9	46.61
CI 3	DNP	8	40.50
	PhD	18	38.00
	MSN	54	48.08
	Unknown	3	38.50
	No Primary Instructor noted	9	62.00
CI 4	DNP	8	52.19
	PhD	18	41.83
	MSN	54	44.26
	Unknown	3	39.67
	No Primary Instructor noted	9	66.50
CI 5	DNP	8	45.50
	PhD	18	48.03
	MSN	54	45.50
	Unknown	3	45.50
	No Primary Instructor noted	9	50.67
CI 6	DNP	8	51.38
	PhD	18	50.47
	MSN	54	45.06
	Unknown	3	40.00
	No Primary Instructor noted	9	45.06
CI 7	DNP	8	49.44
	PhD	18	54.89
	MSN	54	44.51
	Unknown	3	40.83
	No Primary Instructor noted	9	40.94

Content Item	Degree Type	<i>N</i>	<i>MR</i>
CI 8	DNP	8	53.50
	PhD	18	44.28
	MSN	54	44.83
	Unknown	3	70.83
	No Primary Instructor noted	9	46.61
CI 9	DNP	8	53.81
	PhD	18	48.53
	MSN	54	45.49
	Unknown	3	58.50
	No Primary Instructor noted	9	38.00
CI 10	DNP	8	54.75
	PhD	18	46.39
	MSN	54	48.69
	Unknown	3	55.50
	No Primary Instructor noted	9	23.28
CI 11	DNP	8	51.31
	PhD	18	45.50
	MSN	54	46.34
	Unknown	3	45.50
	No Primary Instructor noted	9	45.50
CI 12	DNP	8	45.25
	PhD	18	45.39
	MSN	54	48.93
	Unknown	3	48.83
	No Primary Instructor noted	9	34.50
CI 13	DNP	8	63.13
	PhD	18	48.06
	MSN	54	41.62
	Unknown	3	69.00
	No Primary Instructor noted	9	50.39
CI 14	DNP	8	58.06
	PhD	18	50.33
	MSN	54	45.58
	Unknown	3	43.17
	No Primary Instructor noted	9	35.17

Appendix J

RQ 4 Table of Shapiro-Wilk Test of Normality Scores by Course

RQ 4 Table of Shapiro-Wilk Test of Normality Scores by Course

Course	<i>Statistic</i>	<i>df</i>	<i>Sig.</i>
Fundamentals / Introduction to Nursing	.930	15	.268
Adult Health 1 / Common Concepts 1	.908	7	.380
Adult Health 2 / Complex Concepts 2	.899	7	.325
Obstetric Nursing	.964	3	.637
Pediatric Nursing	.860	4	.262
Obstetric / Pediatric Nursing Combination	.852	5	.202
Mental Health Nursing	.957	9	.771
Community / Public Health Nursing	.904	6	.399
Nursing Pharmacology	.955	12	.708
Management / Leadership Nursing	.966	11	.842
Nursing Pathophysiology	.880	10	.129
Geriatric Nursing	.771	5	.046

Note. *. Violated assumption when using alpha = .01

Appendix K

RQ 4 Table of Games-Howell Multiple Comparisons

RQ 4 Table of Games-Howell Multiple Comparisons

Course	Nursing Courses	<i>MD</i>	<i>SD</i>	<i>Sig.</i>
Fundamentals of Nursing	Adult Health 1 / Complex Concepts 1	.25238	.12290	.659
	Adult Health 2 / Complex Concepts 2	.22177	.13411	.853
	Obstetric Nursing	.22857	.08749	.409
	Pediatric Nursing	-.14048	.13935	.987
	Obstetric / Pediatric Nursing	.09524	.16229	1.000
	Mental Health Nursing	.03016	.10940	1.000
	Community / Public Health Nursing	-.25952	.18831	.933
	Nursing Pharmacology	.12143	.11615	.994
	Management / Leadership Nursing	-.30606	.17431	.815
	Nursing Pathophysiology	.21667	.11054	.711
	Geriatric Nursing	-.20476	.06710	.172
Adult Health 1 / Common Concepts 1	Fundamentals of Nursing	-.25238	.12290	.659
	Adult Health 2 / Complex Concepts 2	-.03061	.16037	1.000
	Obstetric Nursing	-.02381	.12404	1.000
	Pediatric Nursing	-.39286	.16477	.502
	Obstetric / Pediatric Nursing	-.15714	.18459	.998
	Mental Health Nursing	-.22222	.14036	.888
	Community / Public Health Nursing	-.51190	.20783	.456
	Nursing Pharmacology	-.13095	.14568	.998
	Management / Leadership Nursing	-.55844	.19524	.244
	Nursing Pathophysiology	-.03571	.14125	1.000
Geriatric Nursing	-.45714	.11061	.081	
Adult Health 2 / Complex Concepts 2	Fundamentals of Nursing	-.22177	.13411	.853
	Adult Health 1 / Common Concepts 1	.03061	.16037	1.000
	Obstetric Nursing	.00680	.13516	1.000
	Pediatric Nursing	-.36224	.17329	.642
	Obstetric / Pediatric Nursing	-.12653	.19223	1.000
	Mental Health Nursing	-.19161	.15027	.968
	Community / Public Health Nursing	-.48129	.21465	.561
	Nursing Pharmacology	-.10034	.15526	1.000
	Management / Leadership Nursing	-.52783	.20248	.349
	Nursing Pathophysiology	-.00510	.15110	1.000
Geriatric Nursing	-.42653	.12295	.169	

Course	Nursing Courses	<i>MD</i>	<i>SD</i>	<i>Sig.</i>
Obstetric Nursing	Fundamentals of Nursing	-.22857	.08749	.409
	Adult Health 1 / Common Concepts 1	.02381	.12404	1.000
	Adult Health 2 / Complex Concepts 2	-.00680	.13516	1.000
	Pediatric Nursing	-.36905	.14036	.443
	Obstetric / Pediatric Nursing	-.13333	.16316	.998
	Mental Health Nursing	-.19841	.11069	.791
	Community / Public Health Nursing	-.48810	.18906	.429
	Nursing Pharmacology	-.10714	.11736	.997
	Management / Leadership Nursing	-.53463	.17512	.203
	Nursing Pathophysiology	-.01190	.11180	1.000
Geriatric Nursing	-.43333	.06917	.075	
Pediatric Nursing	Fundamentals of Nursing	.14048	.13935	.987
	Adult Health 1 / Common Concepts 1	.39286	.16477	.502
	Adult Health 2 / Complex Concepts 2	.36224	.17329	.642
	Obstetric Nursing	.36905	.14036	.443
	Obstetric / Pediatric Nursing	.23571	.19592	.971
	Mental Health Nursing	.17063	.15497	.983
	Community / Public Health Nursing	-.11905	.21796	1.000
	Nursing Pharmacology	.26190	.15980	.852
	Management / Leadership Nursing	-.16558	.20599	.999
	Nursing Pathophysiology	.35714	.15577	.548
Geriatric Nursing	-.06429	.12864	1.000	
Obstetric / Pediatric Nursing	Fundamentals of Nursing	-.09524	.16229	1.000
	Adult Health 1 / Common Concepts 1	.15714	.18459	.998
	Adult Health 2 / Complex Concepts 2	.12653	.19223	1.000
	Obstetric Nursing	.13333	.16316	.998
	Pediatric Nursing	-.23571	.19592	.971
	Mental Health Nursing	-.06508	.17589	1.000
	Community / Public Health Nursing	-.35476	.23330	.901
	Nursing Pharmacology	.02619	.18016	1.000
	Management / Leadership Nursing	-.40130	.22215	.790
	Nursing Pathophysiology	.12143	.17659	1.000
Geriatric Nursing	-.30000	.15320	.708	

Course	Nursing Courses	<i>MD</i>	<i>SD</i>	<i>Sig.</i>
Mental Health	Fundamentals of Nursing	-.03016	.10940	1.000
	Adult Health 1 / Common Concepts 1	.22222	.14036	.888
	Adult Health 2 / Complex Concepts 2	.19161	.15027	.968
	Obstetric Nursing	.19841	.11069	.791
	Pediatric Nursing	-.17063	.15497	.983
	Obstetric / Pediatric Nursing	.06508	.17589	1.000
	Community / Public Health Nursing	-.28968	.20014	.920
	Nursing Pharmacology	.09127	.13449	1.000
	Management / Leadership Nursing	-.33622	.18704	.798
	Nursing Pathophysiology	.18651	.12967	.939
Geriatric Nursing	-.23492	.09539	.449	
Community / Public Health Nursing	Fundamentals of Nursing	.25952	.18831	.933
	Adult Health 1 / Common Concepts 1	.51190	.20783	.456
	Adult Health 2 / Complex Concepts 2	.48129	.21465	.561
	Obstetric Nursing	.48810	.18906	.429
	Pediatric Nursing	.11905	.21796	1.000
	Obstetric / Pediatric Nursing	.35476	.23330	.901
	Mental Health Nursing	.28968	.20014	.920
	Nursing Pharmacology	.38095	.20391	.753
	Management / Leadership Nursing	-.04654	.24181	1.000
	Nursing Pathophysiology	.47619	.20076	.503
Geriatric Nursing	.05476	.18053	1.000	
Nursing Pharmacology	Fundamentals of Nursing	-.12143	.11615	.994
	Adult Health 1 / Common Concepts 1	.13095	.14568	.998
	Adult Health 2 / Complex Concepts 2	.10034	.15526	1.000
	Obstetric Nursing	.10714	.11736	.997
	Pediatric Nursing	-.26190	.15980	.852
	Obstetric / Pediatric Nursing	-.02619	.18016	1.000
	Mental Health Nursing	-.09127	.13449	1.000
	Community / Public Health Nursing	-.38095	.20391	.753
	Management / Leadership Nursing	-.42749	.19106	.548
	Nursing Pathophysiology	.09524	.13541	1.000
Geriatric Nursing	-.32619	.10306	.167	

Course	Nursing Courses	<i>MD</i>	<i>SD</i>	<i>Sig.</i>
Management / Leadership Nursing	Fundamentals of Nursing	.30606	.17431	.815
	Adult Health 1 / Common Concepts 1	.55844	.19524	.244
	Adult Health 2 / Complex Concepts 2	.52783	.20248	.349
	Obstetric Nursing	.53463	.17512	.203
	Pediatric Nursing	.16558	.20599	.999
	Obstetric / Pediatric Nursing	.40130	.22215	.790
	Mental Health Nursing	.33622	.18704	.798
	Community / Public Health Nursing	.04654	.24181	1.000
	Nursing Pharmacology	.42749	.19106	.548
	Nursing Pathophysiology	.52273	.18770	.272
	Geriatric Nursing	.10130	.16588	1.000
Nursing Pathophysiology	Fundamentals of Nursing	-.21667	.11054	.711
	Adult Health 1 / Common Concepts 1	.03571	.14125	1.000
	Adult Health 2 / Complex Concepts 2	.00510	.15110	1.000
	Obstetric Nursing	.01190	.11180	1.000
	Pediatric Nursing	-.35714	.15577	.548
	Obstetric / Pediatric Nursing	-.12143	.17659	1.000
	Mental Health Nursing	-.18651	.12967	.939
	Community / Public Health Nursing	-.47619	.20076	.503
	Nursing Pharmacology	-.09524	.13541	1.000
	Management / Leadership Nursing	-.52273	.18770	.272
	Geriatric Nursing	-.42143*	.09669	.033
Geriatric Nursing	Fundamentals of Nursing	.20476	.06710	.172
	Adult Health 1 / Common Concepts 1	.45714	.11061	.081
	Adult Health 2 / Complex Concepts 2	.42653	.12295	.169
	Obstetric Nursing	.43333	.06917	.075
	Pediatric Nursing	.06429	.12864	1.000
	Obstetric / Pediatric Nursing	.30000	.15320	.708
	Mental Health Nursing	.23492	.09539	.449
	Community / Public Health Nursing	-.05476	.18053	1.000
	Nursing Pharmacology	.32619	.10306	.167
	Management / Leadership Nursing	-.10130	.16588	1.000
		Nursing Pathophysiology	.42143*	.09669

Note. *. The mean difference is significant at the 0.05 level. *MD*= Mean Difference; *SD* = Standard Deviation; *Sig.* = Significance

Appendix L

RQ 4 Table of Shapiro-Wilk Test of Normality Scores by Courses in the Four Domains

RQ 4 Table of Shapiro-Wilk Test of Normality Scores by Courses in the Four Domains

Domain	Course	Statistic	df	Sig.
Learner-Centered				
	Introduction to Nursing	.877	15	.042
	Adult Health 1 / Common Concepts	1.913	7	.420
	Adult Health 2 / Complex Concepts	2.952	7	.752
	Obstetric Nursing	1.000	3	1.000
	Pediatric Nursing	.993	4	.972
	Obstetric / Pediatric Nursing Comb	.914	5	.492
	Mental Health Nursing	.951	9	.696
	Community / Public Health Nursing	.721	6	.010*
	Nursing Pharmacology	.897	12	.143
	Management / Leadership Nursing	.872	11	.082
	Nursing Pathophysiology	.878	10	.124
	Geriatric Nursing	.883	5	.325
Knowledge-Centered				
	Introduction to Nursing	.905	15	.113
	Adult Health 1 / Common Concepts	.646	7	.001*
	Adult Health 2 / Complex Concepts	.650	7	.001*
	Obstetric / Pediatric Nursing Comb	.767	5	.042
	Mental Health Nursing	.906	9	.290
	Community / Public Health Nursing	.802	6	.062
	Nursing Pharmacology	.705	12	.001*
	Management / Leadership Nursing	.910	11	.242
	Nursing Pathophysiology	.647	10	.000*
	Geriatric Nursing	.863	5	.238
Assessment-Centered				
	Introduction to Nursing	.766	15	.001*
	Adult Health 1 / Common Concepts	.769	7	.020
	Adult Health 2 / Complex Concepts	.880	7	.224
	Obstetric Nursing	.750	3	.000*
	Pediatric Nursing	.630	4	.001*
	Obstetric / Pediatric Nursing Comb	.552	5	.000*
	Mental Health Nursing	.685	9	.001*
	Community / Public Health Nursing	.960	6	.820
	Nursing Pharmacology	.902	12	.170
	Management / Leadership Nursing	.909	11	.237
	Nursing Pathophysiology	.909	10	.276
	Geriatric Nursing	.828	5	.135

Domain	Course	<i>Statistic</i>	<i>df</i>	<i>Sig.</i>
Community-Centered				
	Introduction to Nursing	.942	15	.414
	Adult Health 1 / Common Concepts	.816	7	.059
	Adult Health 2 / Complex Concepts	.896	7	.307
	Obstetric Nursing	1.000	3	1.000
	Pediatric Nursing	.827	4	.161
	Obstetric / Pediatric Nursing Comb	.727	5	.018
	Mental Health Nursing	.873	9	.132
	Community / Public Health Nursing	.983	6	.964
	Nursing Pharmacology	.834	12	.024
	Management / Leadership Nursing	.969	11	.880
	Nursing Pathophysiology	.869	10	.099
	Geriatric Nursing	.771	5	.046

Note. *. Violated assumption when using alpha = .01

Appendix M

RQ 4 Mean Ranks for Courses by Domain

RQ4 Mean Ranks for Courses by Domain

Domain	Course Type	<i>N</i>	<i>MR</i>
Learner-Centered			
	Fundamentals / Introduction to Nursing	15	44.37
	Adult Health 1 / Common Concepts 1	7	45.36
	Adult Health 2 / Complex Concepts 2	7	48.07
	Obstetric Nursing	3	48.17
	Pediatric Nursing	4	38.50
	Obstetric / Pediatric Nursing Combination	5	55.90
	Mental Health Nursing	9	50.72
	Community / Public Health Nursing	6	45.33
	Nursing Pharmacology	12	40.96
	Management / Leadership Nursing	11	56.09
	Nursing Pathophysiology	10	40.50
	Geriatric Nursing	5	65.10
Knowledge-Centered			
	Fundamentals / Introduction to Nursing	15	49.27
	Adult Health 1 / Common Concepts 1	7	28.14
	Adult Health 2 / Complex Concepts 2	7	32.64
	Obstetric Nursing	3	44.50
	Pediatric Nursing	4	76.00
	Obstetric / Pediatric Nursing Combination	5	38.30
	Mental Health Nursing	9	52.17
	Community / Public Health Nursing	6	57.08
	Nursing Pharmacology	12	38.50
	Management / Leadership Nursing	11	65.91
	Nursing Pathophysiology	10	31.00
	Geriatric Nursing	5	72.50
Assessment-Centered			
	Fundamentals / Introduction to Nursing	15	55.03
	Adult Health 1 / Common Concepts 1	7	32.36
	Adult Health 2 / Complex Concepts 2	7	34.36
	Obstetric Nursing	3	26.00
	Pediatric Nursing	4	62.88
	Obstetric / Pediatric Nursing Combination	5	46.10
	Mental Health Nursing	9	49.39
	Community / Public Health Nursing	6	55.08
	Nursing Pharmacology	12	46.88
	Management / Leadership Nursing	11	55.41
	Nursing Pathophysiology	10	34.45
	Geriatric Nursing	5	64.20

Appendix N

RQ 4 Table of Shapiro Wilk Normality Scores for Content Items by Course Type

RQ 4 Table of Shapiro Wilk Normality Scores for Content Items by Course Type

CI	Course Type	Statistic	df	Sig.
CI 1	Fundamentals / Introduction to Nursing	.413	15	.000*
	Adult Health 1 / Common Concepts 1	.453	7	.000*
	Mental Health Nursing	.390	9	.000*
	Nursing Pharmacology	.650	12	.000*
	Management / Leadership Nursing	.724	11	.001*
	Nursing Pathophysiology	.366	10	.000*
	Geriatric Nursing	.552	5	.000*
CI 2	Fundamentals / Introduction to Nursing	.413	15	.000*
	Adult Health 1 / Common Concepts 1	.600	7	.000*
	Community / Public Health Nursing	.496	6	.000*
	Nursing Pharmacology	.327	12	.000*
	Management / Leadership Nursing	.486	11	.000*
	Nursing Pathophysiology	.509	10	.000*
	Geriatric Nursing	.552	5	.000*
CI 3	Fundamentals / Introduction to Nursing	.758	15	.001*
	Adult Health 1 / Common Concepts 1	.833	7	.086
	Adult Health 2 / Complex Concepts 2	.840	7	.099
	Obstetric Nursing	.750	3	.000*
	Pediatric Nursing	.945	4	.683
	Obstetric / Pediatric Nursing Combination	.881	5	.314
	Mental Health Nursing	.780	9	.012
	Community / Public Health Nursing	.866	6	.212
	Nursing Pharmacology	.753	12	.003*
	Management / Leadership Nursing	.795	11	.008*
	Nursing Pathophysiology	.794	10	.012
	Geriatric Nursing	.552	5	.000*
CI 4	Fundamentals / Introduction to Nursing	.710	15	.000*
	Adult Health 1 / Common Concepts 1	.732	7	.008*
	Adult Health 2 / Complex Concepts 2	.664	7	.001*
	Obstetric Nursing	.750	3	.000*
	Pediatric Nursing	.630	4	.001*
	Obstetric / Pediatric Nursing Combination	.881	5	.314
	Mental Health Nursing	.823	9	.037
	Community / Public Health Nursing	.822	6	.091
	Nursing Pharmacology	.608	12	.000*
	Management / Leadership Nursing	.834	11	.026
	Nursing Pathophysiology	.731	10	.002*
	Geriatric Nursing	.552	5	.000*

CI	Course Type	<i>Statistic</i>	<i>df</i>	<i>Sig.</i>
CI 5	Community / Public Health Nursing	.702	6	.007*
	Nursing Pathophysiology	.366	10	.000*
CI 6	Fundamentals / Introduction to Nursing	.284	15	.000*
	Pediatric Nursing	.729	4	.024
	Mental Health Nursing	.390	9	.000*
	Community / Public Health Nursing	.702	6	.007*
	Nursing Pharmacology	.327	12	.000*
	Management / Leadership Nursing	.625	11	.000*
	Geriatric Nursing	.684	5	.006*
CI 7	Fundamentals / Introduction to Nursing	.888	15	.063
	Adult Health 1 / Common Concepts 1	.453	7	.000*
	Adult Health 2 / Complex Concepts 2	.646	7	.001*
	Pediatric Nursing	.729	4	.024
	Obstetric / Pediatric Nursing Combination	.735	5	.021
	Mental Health Nursing	.870	9	.122
	Community / Public Health Nursing	.767	6	.029
	Nursing Pharmacology	.624	12	.000*
	Management / Leadership Nursing	.748	11	.002*
	Nursing Pathophysiology	.366	10	.000*
CI 8	Geriatric Nursing	.821	5	.119
	Fundamentals / Introduction to Nursing	.284	15	.000*
	Adult Health 1 / Common Concepts 1	.453	7	.000*
	Adult Health 2 / Complex Concepts 2	.453	7	.000*
	Obstetric / Pediatric Nursing Combination	.552	5	.000*
	Mental Health Nursing	.390	9	.000*
	Management / Leadership Nursing	.604	11	.000*
	Nursing Pathophysiology	.366	10	.000*
CI 9	Geriatric Nursing	.552	5	.000*
	Fundamentals / Introduction to Nursing	.663	15	.000*
	Adult Health 1 / Common Concepts 1	.777	7	.024
	Adult Health 2 / Complex Concepts 2	.818	7	.062
	Obstetric Nursing	.750	3	.000*
	Pediatric Nursing	.630	4	.001*
	Obstetric / Pediatric Nursing Combination	.552	5	.000*
	Mental Health Nursing	.805	9	.024
	Community / Public Health Nursing	.866	6	.212
	Nursing Pharmacology	.824	12	.018
	Management / Leadership Nursing	.906	11	.217
	Nursing Pathophysiology	.781	10	.008*

CI	Course Type	<i>Statistic</i>	<i>df</i>	<i>Sig.</i>
CI 10	Fundamentals / Introduction to Nursing	.525	15	.000*
	Adult Health 1 / Common Concepts 1	.664	7	.001*
	Adult Health 2 / Complex Concepts 2	.769	7	.020
	Obstetric Nursing	.750	3	.000*
	Mental Health Nursing	.390	9	.000*
	Community / Public Health Nursing	.496	6	.000*
	Nursing Pharmacology	.770	12	.004*
	Management / Leadership Nursing	.774	11	.004*
	Nursing Pathophysiology	.640	10	.000*
	Geriatric Nursing	.828	5	.135
CI 11	Fundamentals / Introduction to Nursing	.284	15	.000*
	Nursing Pathophysiology	.366	10	.000*
CI 12	Fundamentals / Introduction to Nursing	.663	15	.000*
	Adult Health 1 / Common Concepts 1	.664	7	.001*
	Adult Health 2 / Complex Concepts 2	.664	7	.001*
	Pediatric Nursing	.630	4	.001*
	Mental Health Nursing	.390	9	.000*
	Community / Public Health Nursing	.640	6	.001*
	Nursing Pharmacology	.552	12	.000*
	Management / Leadership Nursing	.486	11	.000*
	Nursing Pathophysiology	.594	10	.000*
	Geriatric Nursing	.552	5	.000*
CI 13	Fundamentals / Introduction to Nursing	.722	15	.000*
	Adult Health 1 / Common Concepts 1	.453	7	.000*
	Adult Health 2 / Complex Concepts 2	.453	7	.000*
	Pediatric Nursing	.863	4	.272
	Obstetric / Pediatric Nursing Combination	.552	5	.000*
	Mental Health Nursing	.536	9	.000*
	Community / Public Health Nursing	.775	6	.035
	Nursing Pharmacology	.608	12	.000*
	Management / Leadership Nursing	.779	11	.005*
	Nursing Pathophysiology	.594	10	.000*

CI	Course Type	<i>Statistic</i>	<i>df</i>	<i>Sig.</i>
CI 14	Fundamentals / Introduction to Nursing	.865	15	.029
	Adult Health 1 / Common Concepts 1	.769	7	.020
	Adult Health 2 / Complex Concepts 2	.781	7	.026
	Obstetric Nursing	1.000	3	1.000
	Pediatric Nursing	.863	4	.272
	Obstetric / Pediatric Nursing Combination	.828	5	.135
	Mental Health Nursing	.844	9	.065
	Community / Public Health Nursing	.701	6	.006*
	Nursing Pharmacology	.891	12	.123
	Management / Leadership Nursing	.778	11	.005*
	Nursing Pathophysiology	.738	10	.003*
	Geriatric Nursing	.881	5	.314

Note. *. Violated assumption when using alpha = .01

Appendix O

RQ 4 Mean Ranks for Courses by Content Item

RQ 4 Mean Ranks for Courses by Content Item

Content Item	Course Type	<i>N</i>	<i>MR</i>
CI 1 Cultural Basis Acknowledgment			
	Fundamentals / Introduction to Nursing	15	50.50
	Adult Health 1 / Common Concepts 1	7	50.93
	Adult Health 2 / Complex Concepts 2	7	44.50
	Obstetric Nursing	3	44.50
	Pediatric Nursing	4	44.50
	Obstetric / Pediatric Nursing Combination	5	44.50
	Mental Health Nursing	9	49.50
	Community / Public Health Nursing	6	44.50
	Nursing Pharmacology	12	41.54
	Management / Leadership Nursing	11	48.82
	Nursing Pathophysiology	10	49.00
	Geriatric Nursing	5	53.50
CI 2 Conceptual and Cultural Knowledge Building			
	Fundamentals / Introduction to Nursing	15	48.27
	Adult Health 1 / Common Concepts 1	7	55.43
	Adult Health 2 / Complex Concepts 2	7	42.00
	Obstetric Nursing	3	42.00
	Pediatric Nursing	4	42.00
	Obstetric / Pediatric Nursing Combination	5	42.00
	Mental Health Nursing	9	42.00
	Community / Public Health Nursing	6	49.83
	Nursing Pharmacology	12	45.92
	Management / Leadership Nursing	11	50.55
	Nursing Pathophysiology	10	51.40
	Geriatric Nursing	5	51.40
CI 3 Course Goals / Objectives			
	Fundamentals / Introduction to Nursing	15	41.10
	Adult Health 1 / Common Concepts 1	7	40.07
	Adult Health 2 / Complex Concepts 2	7	45.50
	Obstetric Nursing	3	61.50
	Pediatric Nursing	4	50.50
	Obstetric / Pediatric Nursing Combination	5	57.50
	Mental Health Nursing	9	53.94
	Community / Public Health Nursing	6	56.50
	Nursing Pharmacology	12	44.83
	Management / Leadership Nursing	11	50.77
	Nursing Pathophysiology	10	43.50
	Geriatric Nursing	5	43.90

Content Item	Course Type	<i>N</i>	<i>MR</i>
CI 4 Teaching Practices			
	Fundamentals / Introduction to Nursing	15	44.73
	Adult Health 1 / Common Concepts 1	7	42.43
	Adult Health 2 / Complex Concepts 2	7	53.64
	Obstetric Nursing	3	42.83
	Pediatric Nursing	4	36.13
	Obstetric / Pediatric Nursing Combination	5	56.50
	Mental Health Nursing	9	50.83
	Community / Public Health Nursing	6	41.75
	Nursing Pharmacology	12	40.67
	Management / Leadership Nursing	11	58.00
	Nursing Pathophysiology	10	37.10
	Geriatric Nursing	5	72.20
CI 5 Need for Knowledge			
	Fundamentals / Introduction to Nursing	15	46.00
	Adult Health 1 / Common Concepts 1	7	46.00
	Adult Health 2 / Complex Concepts 2	7	46.00
	Obstetric Nursing	3	46.00
	Pediatric Nursing	4	46.00
	Obstetric / Pediatric Nursing Combination	5	46.00
	Mental Health Nursing	9	46.00
	Community / Public Health Nursing	6	61.83
	Nursing Pharmacology	12	46.00
	Management / Leadership Nursing	11	46.00
	Nursing Pathophysiology	10	50.60
	Geriatric Nursing	5	46.00
CI 6 Metacognitive Practices and Sense-making			
	Fundamentals / Introduction to Nursing	15	44.10
	Adult Health 1 / Common Concepts 1	7	41.00
	Adult Health 2 / Complex Concepts 2	7	41.00
	Obstetric Nursing	3	41.00
	Pediatric Nursing	4	64.25
	Obstetric / Pediatric Nursing Combination	5	41.00
	Mental Health Nursing	9	46.17
	Community / Public Health Nursing	6	57.58
	Nursing Pharmacology	12	44.88
	Management / Leadership Nursing	11	57.91
	Nursing Pathophysiology	10	41.00
	Geriatric Nursing	5	59.60

Content Item	Course Type	<i>N</i>	<i>MR</i>
CI 7 Engagement and Doing			
	Fundamentals / Introduction to Nursing	15	53.27
	Adult Health 1 / Common Concepts 1	7	25.43
	Adult Health 2 / Complex Concepts 2	7	32.14
	Obstetric Nursing	3	52.00
	Pediatric Nursing	4	68.00
	Obstetric / Pediatric Nursing Combination	5	39.80
	Mental Health Nursing	9	52.33
	Community / Public Health Nursing	6	57.67
	Nursing Pharmacology	12	39.33
	Management / Leadership Nursing	11	66.73
	Nursing Pathophysiology	10	27.30
	Geriatric Nursing	5	68.00
CI 8 Competency and Mastery			
	Fundamentals / Introduction to Nursing	15	45.37
	Adult Health 1 / Common Concepts 1	7	49.21
	Adult Health 2 / Complex Concepts 2	7	49.21
	Obstetric Nursing	3	42.50
	Pediatric Nursing	4	42.50
	Obstetric / Pediatric Nursing Combination	5	51.10
	Mental Health Nursing	9	47.72
	Community / Public Health Nursing	6	42.50
	Nursing Pharmacology	12	42.50
	Management / Leadership Nursing	11	56.05
	Nursing Pathophysiology	10	47.20
	Geriatric Nursing	5	51.90
CI 9 Course Assignments			
	Fundamentals / Introduction to Nursing	15	56.20
	Adult Health 1 / Common Concepts 1	7	36.57
	Adult Health 2 / Complex Concepts 2	7	34.43
	Obstetric Nursing	3	26.33
	Pediatric Nursing	4	62.75
	Obstetric / Pediatric Nursing Combination	5	42.40
	Mental Health Nursing	9	48.56
	Community / Public Health Nursing	6	63.17
	Nursing Pharmacology	12	40.83
	Management / Leadership Nursing	11	56.64
	Nursing Pathophysiology	10	29.40
	Geriatric Nursing	5	72.00

Content Item	Course Type	<i>N</i>	<i>MR</i>
CI 10 Evaluation			
	Fundamentals / Introduction to Nursing	15	47.37
	Adult Health 1 / Common Concepts 1	7	38.50
	Adult Health 2 / Complex Concepts 2	7	36.93
	Obstetric Nursing	3	42.50
	Pediatric Nursing	4	56.50
	Obstetric / Pediatric Nursing Combination	5	56.50
	Mental Health Nursing	9	50.61
	Community / Public Health Nursing	6	47.67
	Nursing Pharmacology	12	54.58
	Management / Leadership Nursing	11	48.32
	Nursing Pathophysiology	10	39.70
	Geriatric Nursing	5	53.10
CI 11 Revisioning			
	Fundamentals / Introduction to Nursing	15	49.60
	Adult Health 1 / Common Concepts 1	7	46.50
	Adult Health 2 / Complex Concepts 2	7	46.50
	Obstetric Nursing	3	46.50
	Pediatric Nursing	4	46.50
	Obstetric / Pediatric Nursing Combination	5	46.50
	Mental Health Nursing	9	46.50
	Community / Public Health Nursing	6	46.50
	Nursing Pharmacology	12	46.50
	Management / Leadership Nursing	11	46.50
	Nursing Pathophysiology	10	51.25
	Geriatric Nursing	5	46.50
CI 12 Class Culture / Norms			
	Fundamentals / Introduction to Nursing	15	51.77
	Adult Health 1 / Common Concepts 1	7	54.36
	Adult Health 2 / Complex Concepts 2	7	54.36
	Obstetric Nursing	3	35.50
	Pediatric Nursing	4	46.50
	Obstetric / Pediatric Nursing Combination	5	35.50
	Mental Health Nursing	9	40.39
	Community / Public Health Nursing	6	54.17
	Nursing Pharmacology	12	46.50
	Management / Leadership Nursing	11	45.68
	Nursing Pathophysiology	10	48.70
	Geriatric Nursing	5	44.30

Content Item	Course Type	<i>N</i>	<i>MR</i>
CI 13 Collaboration			
	Fundamentals / Introduction to Nursing	15	55.03
	Adult Health 1 / Common Concepts 1	7	35.36
	Adult Health 2 / Complex Concepts 2	7	35.36
	Obstetric Nursing	3	30.50
	Pediatric Nursing	4	51.50
	Obstetric / Pediatric Nursing Combination	5	40.50
	Mental Health Nursing	9	38.06
	Community / Public Health Nursing	6	61.17
	Nursing Pharmacology	12	47.17
	Management / Leadership Nursing	11	69.23
	Nursing Pathophysiology	10	45.50
	Geriatric Nursing	5	30.50
CI 14 Contextual Learning			
	Fundamentals / Introduction to Nursing	15	48.53
	Adult Health 1 / Common Concepts 1	7	25.57
	Adult Health 2 / Complex Concepts 2	7	32.29
	Obstetric Nursing	3	36.00
	Pediatric Nursing	4	65.13
	Obstetric / Pediatric Nursing Combination	5	40.60
	Mental Health Nursing	9	51.50
	Community / Public Health Nursing	6	70.75
	Nursing Pharmacology	12	43.71
	Management / Leadership Nursing	11	63.32
	Nursing Pathophysiology	10	33.10
	Geriatric Nursing	5	64.10