COMPARISON OF THREE INSTRUCTIONAL METHODS FOR TEACHING PATHOPHYSIOLOGY

Abstract

Online delivery is an increasingly popular method of offering nursing education in post-licensure (RN-BSN) programs of study. Distance learners have unprecedented access to education, and the online method of delivery has been widely embraced by learners who may not otherwise have an opportunity to pursue or advance a career in nursing. Research exploring how students perceive their overall academic experience if they are taking an online, hybrid, and onsite courses is scarce. Traditional course formats, such as lecture, create challenges in making courses accessible as well as cost effective. In response, technologically based teaching and learning formats are being increasingly used as an acceptable method of course delivery. Online learning provides an ideal opportunity for RNs to continue working toward their BSN while pursuing additional education that may yield career advancement and provide a safer and more competent nursing workforce Further research is needed to better understand student perceptions about their learning in an online, hybrid, and onsite environment, and to address faculty concerns about quality, communication, interaction, and mastery of technology. The purpose of this paper is to compare learners' perceptions of the educational experiences in the RN-BSN program, based on the enrollment track (online, hybrid, and face-to-face) in which the learner was registered. This paper compares and summarizes results of three sets of qualitative study (N=26); face-to-face (n=11); hybrid (n=7); and online (n=8). While the key findings are in line with and support the findings in the literature, self-directed learning component revealed a surprising result.

Key words: blended learning, constructivism, andragogy, pathophysiology course in nursing, student success, course satisfaction, face-to-face teaching, and online education.

Notable Differences Among Traditional, Hybrid, and Online teaching methods in Undergraduate RN-BSN

Nursing programs

An increased demand for learning in higher education is owed to the fast-changing environment of globalization, increase in use of technology (such as mobile devices, digital textbooks, instant messaging, and webcasts), and the need for highly skilled workers. Technological interventions have transformed the traditional forum for learning. The Institute of Medicine (IOM) report on the *Future of Nursing* (2011) is calling for a baccalaureate level Registered Nurse workforce of at least 80 percent by 2020. Online post-licensure nursing education has been part of the changing landscape of nursing education by allowing educational access for thousands of RNs. The number of RN-BSN distance education programs has increased significantly since 2000 but little research exists regarding the perceptions RN-BSN students have about the distance learning experience. Because the distance education or online learning (OL) experience differs from that obtained through traditional classrooms (TC) and hybrid method (HM), it is imperative for the RN-BSN students to know what to expect.

Several nursing leadership groups have voiced the need to increase the number of baccalaureate-degreed nurses. The National Advisory Council on Nurse Education and Practice (2003) has urged that at least two thirds of the nursing workforce hold baccalaureate or higher degrees in nursing by 2010. Meanwhile, the American Organization of Nurse Executives ([AONE] 2005) has recommended a nationwide effort to substantially expand the availability of baccalaureate nursing

programs, citing a growing body of research supporting the relationship between the levels of nursing education and both the quality and safety of patient care.

According to the U.S. Department of Labor (2007), nurses represent the largest health care occupation, with about 2.4 million jobs. As of 2009, three major educational paths can be followed to become a registered nurse: (a) a 3-year diploma degree from an accredited nursing program; (b) a 2-year associate's degree, typically available through community colleges; and (c) the 4-year baccalaureate degree offered by senior colleges or universities. Graduates of all three programs sit for the same licensing examination.

Enhancing students' learning experience is critical to the success of distance education, regardless of the curriculum. Distance learning provides a viable option for nurses who might not otherwise have the opportunity to continue their education. By tapping into this learning resource, more nurses will be able to advance their personal knowledge as well as the nursing profession.

Statement of the Problem

Some students adapt to the online classroom easily and successfully while others struggle. Some students believe the online classroom closely supports their learning styles better than do face-to-face settings, especially if they need time to think and reflect on things before responding to questions or communicating their ideas. Students may find they express themselves more freely and effectively in writing rather than aloud (Palloff and Pratt (2001).

Moody (2004) suggested that some students are not prepared for the amount of self-learning and self-direction that is required in the distance education venue. The role of online instructors is quite different from that of their classroom counterparts. Whereas instructors lead the learning process in the traditional classroom, in the distance education arena, students are empowered to take charge. The National Nursing Staff Development Organization (2006) contended the online environment differs

vastly from the traditional classroom. Students need to recognize that the online environment requires students to assume new roles in the learning process. Online education utilizes teaching/learning strategies which may differ from those employed in brick-and-mortar settings. These distinctions translate to the possibility of students not being adequately prepared for the challenges they face in the online academic environment. The National Nursing Staff Development Organization (2006) suggested distance nursing education students face several challenges. Students need to understand that, because communication may be asynchronous, immediate feedback might not be relayed. Students must recognize online courses require as much time as traditional classes. Students often assume online education will be a quicker way to accomplish learning. Online learning may often involve group work but many students may find this task challenging because the group members may be in different time zones and have different schedules.

The U.S. college student population is shifting from the traditional 18-24 year old age group to the nontraditional student who is older, working, or a parent Customary face-to-face coursework does not provide the needed flexibility for these nontraditional students to attend classes. Characteristics of the nontraditional student can range from an older, working learner with family responsibilities, to an enlisted military member, or a younger student working his or her way through college. Schools, colleges, and students have noted online programs offer educational flexibility to meet family and work obligations, convenience, cost savings, and time efficiencies by eliminating commuting time going to a physical campus. enrollment in online degree programs is more than double.

Despite the popularity, online coursework has resulted in lower retention rates compared to face-to-face traditional education (Varner, 2013). To discover potential reasons for the discrepancy, Nguyen (2011) compared online, blended, and face-to-face teaching and found online education results are contradictory because "educational research is often inconsistent with the use of research methods, setting, treatments, and measurement instruments" (p. 26).

The need to provide learners with an educational environment that will promote understanding and application is essential to their success, not only throughout the nursing program and state licensure examination, but also as a registered nurse working with patients (Logan & Angel, 2011). Currently, traditional learning environments are being used in introductory biomedical courses, such as, pathophysiology and pharmacology; however, traditional learning environments do not promote self-direction and student engagement (Berger, 2008)

Enhancing students' learning experience is critical to the success of distance education, regardless of the curriculum. However, first, we need to explore the perceptions RN-BSN students have about the distance learning experience and compare it with their perceptions of hybrid and traditional classroom methods.

Purpose of the study

The purpose of this study was to explore the perceptions RN-BSN students have about the distance learning experience and compare student experiences in three content delivery methods (online, hybrid and traditional in class lecture course format) in an introductory nursing pathophysiology course in order to identify which content delivery method was most successful and satisfying to students. The study took place in an introductory pathophysiology course over three semesters using three student groups.

Literature Review

Key words in this literature review were: *pathophysiology courses in nursing, student success, course satisfaction, blended learning, online learning, constructivism, andragogy, and traditional teaching methods*. The databases used for this literature search included Academic Research Premier, Cumulative Index of Nursing and Allied Health Literature (CINAHL), Education Research Information

Center (ERIC), ProQuest Nursing Journals, and Dissertations and Thesis Full Text. In addition to the database searches, references within articles researched and library catalogs were used. A large number of articles were located that included information on the three teaching methods in nursing courses. There were only a few sources were found related to blended and online learning specifically for pathophysiology course in nursing. The literature review for this study focused on the theoretical frameworks of constructivism and andragogy, which guided this study.

Biomedical nursing courses such as pathophysiology are present in all nursing programs. Pathophysiology courses are identified as being one of the most difficult courses throughout nursing curricula (Elberson et al., 2011; Logan & Angel, 2011). Many times students are not successful in biomedical nursing courses. According to Logan and Angel (2011), "Failure rates in biomedical nursing courses can be, and is often times, higher than 22%" (p.409). Although pathophysiology courses are difficult, students need to have an understanding about diseases and disease processes to function safely as beginning nurses. Currently, nurses are caring for clients who have complex disease processes that require nurses to be able to understand and make critical decisions about client care (Wong & Wong, 1999). The knowledge and ability to make competent care decisions are taught in introductory pathophysiology courses. The teaching and learning processes in pathophysiology courses need to be effective in order for nursing students to progress through nursing programs successfully as well as increase the safety of client care. The learner's ability to apply concepts of pathophysiology to actual nursing practice is an essential function for novice nurses. Pathophysiology courses are most often taught in in-class lecture settings (Al-Modhefer, 2009; Berger, 2008;). Pathophysiology courses continue to have a large amount of course content as well as large class sizes. In order to be most efficient, traditional lecture has been the primary course delivery method utilized. Lecture, however, promotes passive learning and inhibits active course engagement (Al-Modhefer, 2009;). Due to increasing diversity among students, course schedules, and increasing class sizes,

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interactions between the faculty and students are becoming increasingly difficult in traditional course formats (Elberson et al., 2001).

Traditional course formats, such as lecture, create challenges in making courses accessible as well as cost effective (Billings & Halstead, 2012). In response, technologically based teaching and learning formats are being increasingly used as an acceptable method of course delivery. As Merriam et al. (2007) explained, "81% of higher education institutions in the United States offered at least one fully online or blended course in 2002-2003, and over 1.9 million students were studying online" (p. 40). This movement of online course formats is essential to meet the needs of the consumers of higher education. Blended learning is a term that is used to describe a teaching format that utilizes both in-class and online course components. Blended learning courses provide students with face-to-face course time as well as online learning activities, such as, but not limited to, case studies, simulation, discussion boards, and tutorials (Bristol & Zerwekh, 2011).

Currently, the sole reliance on lecture is being less and less accepted in nursing education (Billings & Halstead, 2012). Literature supports the use of blended learning in higher education; however, few studies investigate the use of blended learning in biomedical nursing courses, such as, pathophysiology. However, with lack of evidence to support the use of learning formats other than lecture, specifically in introductory pathophysiology courses. Faculty members are unable to justify their use and do not want to stray from traditional lecture.

Traditional learning format is a course delivery method that utilizes lecture as the main teaching strategy with or without the availability of online learning activities (Bristol & Zerwekh, 2011). Blended learning format is a course delivery method that utilizes online learning activities as the primary teaching strategy, such as, but not limited to: discussion boards, online case studies, diverse online learning activities, self-completed assignments, and the availability of additional resources with one face-to-face session per unit that is used

for activities, with no lecture component (Bristol & Zerwekh, 2011).

Blended learning combines the best of both worlds, online and faceto-face learning formats. Blended learning formats allow learners the time and flexibility of accessing information that may not be available in face-to-face course formats (Moore et al., 2006). Vaughan (2007) examined student's perspectives of blended learning by administering a survey to 282 students who had taken part in blended learning courses. Vaugnan (2007) found that "80% of the respondents indicated that blended learning was worthwhile with the largest influence being the time flexibility provided by the blended format" (p. 84). The increasing demands of adult learners make it difficult to attend classes (Ausburn, 2004; Brandt et al., 2010). Blended learning courses limit the number of in-class course dates, which offer the learner more flexibility that allows them to meet the demands of life and course work. Blended learning courses provide a variety of teaching methods and learning tools that may otherwise be limited in online and face-to-face courses. The online course component provides learner access to activities, such as, case studies, discussion boards, quizzes, and interactive learning opportunities that promote self-directedness and enhance course flexibility (Jonkinen & Mikkonen, 2013; Lopez-Perez et al., 2010). Blended learning course formats can be very effective and beneficial; however, limitations to this course design exist. Course faculty need to be active in the online as well as in-class course components. Lack of faculty involvement and collaboration has been linked to poor student satisfaction and success (Harris et al., 2009; Heinze, 2004). Faculty members need to be trained and familiar with online course formats prior to teaching in blended learning courses.

Many changes have been made in higher education in regard to learning formats. Teaching and learning formats have been changing largely due to technology and changing student demographics.

This evolution has resulted in an increasing use of computer-based educational methodologies. Online and blended learning have become increasingly popular teaching formats, especially in higher education. Studies suggest that students in blended learning environments are successful as well as highly satisfied with the learning experience and the flexibility that blended learning courses offer (Lopez-Perez et al., 2010). Although research supports the use of blended learning in higher education, little evidence exists to support the blended learning format in biomedical nursing courses such as pathophysiology. This study will provide further knowledge and understanding of the use of blended learning in introductory nursing pathophysiology courses.

Russell (2001) assembled what is considered the seminal annotated bibliography of outcomes of students taking courses via technology, as compared to the outcomes of those taking courses delivered by traditional face-to-face instruction. After examining over 300 studies that compared the learning outcomes of students in both groups, Russell concluded that no matter how a course is produced and delivered, students learn equally as well through technology as their on-campus counterparts. This was the first large scale study to conclude that there is no significant difference in student outcomes among delivery systems. The "no significant difference" phenomenon in learning outcomes has continued to be shown in numerous other comparison studies (Hoch & Doughe, 2011; Kummerow, Miller, & Reed, 2012; Sussman & Dutter, 2010). Variations on this research have continued as skeptics remain among faculty and administrators who still doubt the value of online learning. Research comparisons to show equivalent outcomes have extended to beyond online and onsite courses. Arbaugh et al. (2009) found no significant difference in outcomes between online and hybrid courses. Other studies (Bowen, Chingos, Lack, & Nygren, 2012) found no significant difference in outcomes between students taking hybrid and onsite courses. Larson and Sung (2009) established that there was no significant difference in outcomes of students taking a business course offered in all three delivery modes; online, hybrid, and onsite. Ritter, Polnick, Fink, and Oescher (2010)

also found no difference in the perceptions of learning among students taking courses in all three delivery modes. Because multiple studies have found that learning context -- online, onsite, or hybrid -- does not make a difference in student learning outcomes as measured by exams and final grades, there is an increasing realization that continuing to conduct course comparisons of grade outcomes between online and onsite students may add little new insight or information about the actual experience or perceptions of students or faculty involved in different modes of delivery (Arbaugh et al., 2009; Deggs et. al, 2010). More research that explores students' perceived learning experiences in mixed delivery programs would add needed information to our understanding of these various learning environments.

A study of 800 students who assessed their own online course experience compared to their onsite experience found that one-third felt that their online courses were a poor educational choice for them (Bristow, Shepherd, Humphreys, & Zeibell, 2011). Other studies indicate a mixed result in comparing student perceptions of online and onsite courses.

Kock, Verville, and Garza (2007) contrasted and compared student perceptions and grades in different sections of an information systems course, both online and onsite. Students who studied online perceived difficulty communicating with faculty and peers and received lower grades at mid-semester than those onsite, although by the end of the term, these variations had disappeared and no significant differences were found between the two groups. Mortagy and Boghikian-Whitby (2010) described online students as perceiving faculty to have higher expectations of online students than those onsite. In addition, some studies have found that online graduate students scored higher grades than onsite students (Vogel, 2011) and believed that their online course experience was better than that of onsite students (Robertson, Grant, & Jackson, 2005). This is further supported by an analysis commissioned by the US Department of Education which examined the impact of online and hybrid courses on learning outcomes. The analysis found that both online and hybrid courses have a significant positive impact on learning outcomes, although hybrid courses have a greater impact (Means, Toyama,

Murphy, Bakia, & Jones, 2009). This study also suggested that online learning might be slightly more effective than face-to-face instruction. Rovai (2000, 2001, 2002a, 2002b) has spent the last decade researching different aspects of online learning, and particularly the concept of classroom community in virtual environments. Rovai's work suggests that course design can foster an online community among learners who are physically separated from each other, how the online classroom community affects cognitive learning, and how the concept of "connectedness" online affects persistence rates (Rovai, 2000; Rovai, 2001; Rovai, 2002a; Rovai, 2002b; Rovai, & Jordan, 2004; Rovai & Whiting, 2005). This connection between students that an online environment can foster is particularly important since data increasingly suggest that the concept of an interactive "virtual classroom" is an important contributing factor to positive online retention and student learning.

Extensive research conducted on outcomes between online and onsite courses has shown overwhelmingly that there is no significant difference between technology-delivered courses and traditional on campus courses (Bernard et al., 2004) despite some evidence of student dissatisfaction with online courses (Bristow et al., 2011). Perception of the online learning experience can be influenced by many factors including course design (Jones et al., 2011); the quality of the communication, interaction, and "connectedness" within the course environment (Rovai, 2000; Rovai, 2001; Rovai, 2002a; Rovai, 2002b; Rovai, & Jordan, 2004; Rovai & Whiting, 2005); students' learning styles (Ferguson & Tryjankowski, 2009; Harrington & Loffredo, 2010) and student comfort with technology (Bolliger & Halupa, 2012; Hager et al., 2012).

Despite the popularity of online education, questions about quality, value, and the legitimacy of online education continues to be a concern for faculty (Allen & Seaman, 2013). Many in the academic community feel the growth of online programs is being driven primarily to increase institutional revenue (Wyatt, 2005). Some equate distance learning with an "industrial production line" that requires a risky change in education (Braun, 2008, p. 66). Early in the development

of online courseware, Smith, Ferguson, and Caris (2002) reported that some instructors who teach online often felt their teaching skills were no longer relevant since their presence and oral skills could not be utilized. Ten years later, this observation appeared unchanged as a faculty member at the University of Virginia stated in a 2012 opinion survey in the New York Times,

> Online education is a one-size-fits-all endeavor. It tends to be a monologue and not a real dialogue. The Internet teacher, even one who responds to students via e-mail, can never have the immediacy of contact that the teacher on the scene can, with his sensitivity to unspoken moods and enthusiasms. (Edmundson, 2012, para. 12)

This expressed a concern from faculty members about the quality of student experiences in an online setting. Such apprehension from faculty members has not been addressed during recent years when the number of students enrolled in online courses has grown, particularly at the graduate level.

Several theories and constructs guided the interpretations of the findings of this study. The constructivist learning theory is a combination of Piaget and Vygotsky's theories. In order for learning to take place, the learner must be actively involved in the learning process. The teacher's role is one of a facilitator whose function is to clarify and enhance the learner's understanding. According to Al-Huneidi and Schreurs (2012) active involvement on the learner's behalf better prepares the learner to problem solve in complex learning environments teachers should plan and implement teaching activities that allow for active involvement by the students with an opportunity to reflect on their learning with their teachers and fellow students (Holtslander et al., 2012). The teacher's role is that of a collaborator who shares the responsibility of the learning experience with the student. Vygostky (1978) contended that knowledge is constructed as individuals engage in social conversations and activities. Meaning is derived in a dialogic process involving person-to person conversations. Learning, on the other hand, is the process by which individuals are introduced to a culture by more skilled members. Therefore, the fundamental premise of the constructivist theory maintains that learning is a process of constructing

meaning. Learning is based on how humans make sense of their experiences; it is an active process in which learners construct new ideas based upon their current and/or prior knowledge. The learner selects and transforms information, constructs hypotheses, and makes decisions by relying on a cognitive structure to do so. Information is organized in a spiral manner so that the learner is continually building upon on his or her prior knowledge. Meaning is made by the individual and depends on the individual's previous and current knowledge structure Al-Huneidi and Schreurs (2012).

Adult learning theories include the basic concepts of behavioral change and experience. Experiential learning, a form of adult learning theory, emphasizes the role that experience plays in learning (Merriam, 2001). Adult learning theory focuses on self-determined approach to learning (Bhoyrub, Hurley, Neilson, Ramsay, & Smith, 2010). One of the challenges associated with the development of online learning includes the assessment of learning and satisfaction of students. *Andragogy,* a set of assumptions regarding how adults learn, provides a framework for an examination of adult learning. In 1968, Malcolm Knowles proposed a term that would distinguish the learning of adults from the learning of children as well as articulate the fundamental principles of adult learning. The European concept of andragogy, the art and science of helping adults learn, was contrasted with pedagogy, the art and science of helping children learn (Knowles et al., 2005; Merriam, Caffarella, & Baumgartner, 2007). Although Knowles is considered the father of andragogy, other adult educators—including Brookfield, Mezirow, and Tough—also addressed the concept of adult learning theories (De Gagne, 2009; Knowles et al., 2005; Merriam et al., 2007). The principles of andragogy include: (a) the learner's need to know, (b) the learner's self-concept, (c) the role of the learner's experience, (d) the learner's readiness to learn, (e) the learner's orientation to learning, and (f) the learner's motivation to learn (Knowles et al., 2005). Andragogical theory posits that educators treat learners as independent, selfdirected individuals who bring a variety of rich life experiences to every learning situation and who want to participate in decisions related to their own learning. In addition,

adults have changing social roles that affect their learning needs, are interested in immediate application of knowledge, and are motivated by internal rather than external factors (De Gagne, 2009; Knowles et al., 2005).

In addition to Knowles et al.'s (2005) model for adult learning, Kolb's (1983) experiential learning model is also frequently used in nursing education and establishes that learners must be able to enter new learning situations without bias. Kolb (1983) described learning as a four-stage process, stating that learners must possess "concrete experiential abilities, reflective observation abilities, abstract conceptualization abilities, and active experimentation abilities" (p. 30). According to Knowles, Holton, & Swanson (2011): Adult learners:

-need to understand the importance of what they are learning prior to learning it.

-are self-directed and take responsibility for their own learning.

-have past experiences that provide a foundation for the formulation of new

knowledge

-are ready to learn when they need the information

-are task oriented

-motivated by internal factors: self-esteem, job satisfaction

All of the principles should be considered when educating adults.

Student-centered learning (SCL) provided support for this study by contributing empirical evidence in which the learner is the central unit who must be actively engaged in pursuing and constructing meaning. The foundation of social constructivism is based on the principle that knowledge is constructed by learners based on prior experiences. All forms of constructivism involve creation of an individual personal reality grounded on the premise that humans live in subjective worlds. SCL is grounded in constructivist learning theories. Carl Rogers (as cited in Merriam, Caffarella, & Baumgartner, 1999) has emphasized his perspective on SCL for more than 15 years as a psychologist focused on adult

learning. The expectation for online learners through a social constructivist lens is that the learner will be responsible for his or her own learning (Rovai, 2004).

Methodology and Procedure

The current literature supports the need for further investigation into teaching formats that are most effective in introductory nursing pathophysiology courses. Traditional lecture formats, although used most often in introductory pathophysiology courses, seem to have many limitations. After analyzing the literature, blended learning formats, when utilized appropriately, are in alignment with the learning theories of constructivism and andragogy. Blended learning formats have been used successfully in many higher education courses, although little literature exists on the use of blended learning in introductory pathophysiology courses. The purpose of this paper is to compare learners' perceptions of the educational experiences in the RN-BSN program in general and in introductory pathophysiology course in particular, based on the enrollment track (online, hybrid, and face-to-face) in which the learner was registered.

Interpretive description was the qualitative methodological orientation used to address the research question "What are the learners' perceptions of the educational experiences in the RN-BSN program in introductory pathophysiology course?" Grounded in naturalistic inquiry, interpretive description is a framework that guides researchers to maintain a path toward pragmatic versus theoretical findings when addressing applied problems (Thorne, 2008). An interpretive description qualitative method was chosen as the most appropriate and effective method for addressing the research questions guiding this study. This approach guides the researcher to move beyond a straight description of the phenomenon to an analysis that seeks to discover associations, relationships, and patterns within the data/meaning (Thorne, 2008). The interpretive description method is an emerging

qualitative method with the flexibility to fit a variety of disciplinary perspectives (Thorne, 2008). By incorporating procedures from other qualitative methods, this method promotes a deep understanding of study data. Thorne (2008) described interpretive description as a strategy for "excavating, illuminating, articulating, and disseminating" (p. 15), knowledge that is of a central importance to an applied discipline. She highlighted the method's ability to extend beyond mere description into the domain of "so what," (p. 33), that often is the driving force for all disciplines. The interpretive description method derives its purpose from two sources (Thorne, 2008).

The first source is the practice goal. For this study, the practice goal was to enhance teaching/learning using different methods. Interpretive description also derives its purpose from a second source: the desire to determine what is known and not known about a study's focus, based on understanding the empirical evidence (Thorne, 2008).

Procedure and Participants

This study used purposeful sampling. Purposive or purposeful sampling is a technique for recruiting specific individuals by virtue of some angle of experience or phenomenon that all have in common to meet the needs of the study (Powers & Knapp, 2011; Thorne, 2008). As it was mentioned earlier, due to the space limitations, this paper only compares and summarizes the findings from three sets of separate interviews. Face-to-face had been the traditional method for teaching introductory pathophysiology in RN-BSN in this southeastern university. The curriculum changes at the college mandated transforming traditional teaching method to blended and online delivery methods. The first round of interview was done with the students who voluntarily participated in blended online format. The second round of the interview was with the students in the online course. The third round of the interview was with the students in the traditional teaching method. The three types of delivery formats for pathophysiology coursework were (a) online, in which no time is spent in a classroom and the

curriculum was online only, (b) the blended or hybrid course, which was an arrangement of traditional classroom and Internet teaching, and (c) traditional classroom lectures and activities. After receiving IRB approval, IRB approved letter of invitation that explained details of the study was sent to potential participants. Those who indicated interest in sharing their experiences of either teaching method was contacted. Informed consent was obtained, and participants received a copy of the informed consent document for their own personal file.

There was a total of 26 participants (N=26) in the three studies: Online group (n=7), blended group (n=8), and traditional method (n=11). There were 2 males and 24 females. Participants ranged in age from 26-52 years.

Semi structured interviews were conducted in person or by telephone. Interviews lasted 45 minutes to an hour, were audiotaped, and transcribed verbatim. Initially, the researcher asked each participant to share what it had been like to take pathophysiology course. The guiding question followed by subsequent questions to delve deeper into and explore their experiences with that particular teaching method. Following each interview, field notes and memos were documented immediately to allow for meaningful integration of thoughts, observations and identified concepts (Creswell, 2009).

Interpretive description calls for data collection and analysis to occur simultaneously as one informs the other (Thorne et al., 2004). The goal was to use participants' descriptions of their experiences to understand more fully the specific teaching/learning method. The process of open coding began with line by line examination of participants' transcripts. The researcher continually read the data, went back and forth and compared participants' comments, line by line, occurrence to occurrence, and concept to concept. First-level analysis involved identification of phenomena (Saldana, 2013). Through examination and re-examination of data, distinct concepts emerged (Thorne et al., 2004). The researcher conducted second-level analysis by grouping phenomena or concepts into more abstract categories. Lastly, connections or linkages between categories resulted in further conceptualization.

Similar concepts were placed within categories and from these interrelated processes, themes emerged (Saldana, 2013).

Findings

Summary of Findings from Traditional Teaching Method

Traditional classroom teaching focuses on a number of elements including lecture, case studies, and so forth. Learning is conducted in a synchronous environment, meaning that the students must be in the same place at the same time in order to learn. Through examination and re-examination of data, four themes emerged: 1) A hard task but doable, 2) Feeling of comradery, 3) Feeling of presence, and 4) Learning through facilitated communications.

A hard task but doable--Pathophysiology a required course for this program. It is considered a "hard" course by many students. Participants stated that,

-This was one of the hardest courses I have taken so far in nursing program. This was my first try with course, unlike some of my classmates that the course was not required for them in ADN program.

-…too many concepts…too many details…do we need to know all these to become a good nurse?

-I knew this was not going to be an easy course…but you explained it well in class and clarified any misunderstanding in class…that helped me a lot.

-I used the study guide a lot…that helped me to focus my study.

Feeling of comradery—participants felt being on campus was an advantage for them to establish friendship with classmates and form a community,

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-I have made several friends in this class…we study together and sometimes we meet outside. We share stories and discuss about class, exam, and so forth…it is a stress reliever for me.

-As you suggested, I talked with some of my classmates and we formed a study group.

-We get together regularly before class…sometimes we study…we go out to eat, etc

-My friends are very supportive…you know, sometimes you need to talk to someone and they are there for you, especially after the exams (smile).

-Your open-door policy allowed me to come to your office and ask any questions and at any time.

Felling of presence—this theme has been noted in the literature frequently, although has been interpreted differently. Some of the codes related to this theme were similar to the codes in comradery and sense of community. Caring and attentiveness were the two major attributes in this theme,

-I feel everyone here is helping each other to become successful…I just ask my classmates and they do it for me..even one time they found a baby sitter for me.

-You were always there and keep telling us "you can do it"…and, I finally did it.

-Sometimes I had to miss class, but my classmates copied their notes for me and kept me in loop.

-I cannot forget our final exam when you brought pizza for everyone…that was a great stress reliever…I could not pass the exam with an empty stomach…thank you.

Learning through facilitated communication—the emergent theme points at ways learned the contents in this course and how they learned in general,

-Your PPTs were clear, colorful and right to the point…unlike my other courses, I did not have to search and search and search…You explained disease processes clearly and and "I" even could understand them (smile).

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-I attended peer-tutor sessions. Jessica is great, she explained the concept clearly and kept asking questions until we got it. That was a great addition to what you did in class.

-When I am with my classmates in our study group, you cannot believe how much of misunderstanding we have…I mean you say something and we interpreted it completely differently. When we are together and discuss different topics it helps us clear misunderstandings and bring us to the same page.

-I can read and read the book but don't understand a bit…when you explain it in class, add animations and "humor", that is what I look forward to when I come to your class. This is not just me, my classmates feel the same.[you know you need to read the materials before coming to class, do you do that?] I understand…I try, but with my family situation and kids and my job, etc. etc, most of the time I don't get a chance to read the book.

Summary of Findings from Blended (hybrid) Teaching Method

The hybrid classroom incorporates characteristics of both the traditional and online classroom settings. Thus, learning occurs in both synchronous and asynchronous modes. The emerged themes from this study are: 1) no time wasted, 2) flexibility, 3) support, not so much.

No time wasted—all the course materials and supported documents including the instructors PPTs were posted in the course management system. Students still needed to come to class for lectures, participate in case study assignments, and class discussions. Participants felt that was an effective strategy; they had access to the course materials, and to the lectures video/streaming if classes were canceled due to the inclement weather.

- You posted the lectures online when we could not come to campus. That was a good idea. We did not miss any class time. But, why didn't you post all the lectures online? [because I wanted everyone to come to class and participate in class activities]

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-I can read the book over and over but don't get it, animations that you posted online were great. That saved me lots of time reading.

-there were times that you were explaining something, but it was too complicated to understand, instead of taking class time and repeat yourself, you posted additional materials online for us.

Flexibility—overall, participants were satisfied with this method and pointed out how flexible it

is,

-I used to go to the nursing resource center at the start of each semester and print al my notes. In this course, I did not do that since all the lecture materials were online and I could print them when I needed them.

-I liked the extra animations and photos that you posted. Instead of going to the library site and look for them, I could access them all in one place.

-even though I lost attendance points couple of times that I missed the class, but using the notes online helped me to stay current with the lectures.

Support, not so much—Participants did not feel being very close to their classmates and when they needed help, sometimes did not receive any support. Some of the participants believed although using technology is very beneficial to their learning, it might cause some isolations as well,

-It was great that all your course materials were online. But, if something was missing I did not whom to ask for…I know you asked us to introduce ourselves in discussion board, but except for a few, most of my classmates didn't do that…in my other [non hybrid] courses, we introduce ourselves and make friends.

-We used to go to the nursing resource center at the beginning of each semester and print all the class notes. It was a long process…sometimes it took couple of hours…meanwhile we had time to get to know each other. But for this class, when I went upstairs to print notes there were not many people there and I felt I was by myself.

-Even though you insisted that we form study group, I could not connect with any and many of my classmates experienced the same. That's why we asked you to connect us with each other.

Learning through facilitative communication—Participants expressed that they learned the difficult concepts by using different modalities and mostly by listening to class lectures,

-As you suggested, I went to tutor for this course…she was very nice and helpful and she explained the concepts the way you explained to us in class.

-supplemental materials online were very helpful…also, there were practice questions which helped me with my test taking.

-I can say, honestly, coming to class and listening to your lectures prepared me for the exams.[would you elaborate] when I read the material, I don't get it but when you explain, it is so clear to me. [why is that, you know, sometimes you need to read the information few times until you can get the full picture of it] yeah, yeah…when I am in class you lecture and I feel I read it once, then I read one more time before the exam. [so, do you mean, you need someone to read it to you? (smile) …I guess so (smile]

Summary of Findings from Online Teaching Method

Online learning environments occur in an asynchronous mode, meaning that students have the opportunity to learn independently from anywhere at any time. From a learning perspective, one advantage of this mode of educational information delivery is that students can set learning to their own

pace. In addition, four mandatory synchronous meeting were scheduled. Five themes emerged from this study: 1) saving time and money, 2) convenience, 3) busy work, 4) being lonely, 5) learning is in question.

Saving time and money—Participants were satisfied with the online course arrangement and believed it helped them to continue their education, saved them money and time.

-For some of my courses I had to come to campus…drive around and around to find a parking place. Sometimes I could not find a place and had to park in the faculty spaces and so. For my online courses, I do everything from home, save time driving, gas, and headaches caused by that.

-I live about 2 hours from the campus and commute to college was impossible for me…now that the program is online I can work on my coursework and complete my degree from home.

-I am saving lots of money on gas…plus I don't have to risk my life coming down the mountain on icy and snowy road in the winter time. Many times my husband drove me to school.

-I don't have to drive to campus, that saves me time…my problem is with my time management…I am always behind.

Convenience—This attribute was expressed with high frequency. Participants were professional nurses with extreme job and family responsibilities. Driving to campus and taking courses during the day or evening was not an option for many of them. The online format allowed students to work on their learning at their own pace,

-I was not able to come to school in the past two years because I could not find to dedicate to my education. The recruiter was keep calling me, and I just keep telling her, tuition is not the problem for me but time is…I cannot drive to school everyday…

-I like going to class but sometimes I found it stressful, when the instructor ask questions from you directly.

-It is so great, it works perfectly for me. I work 7am-7pm shift, I get home make dinner, feed

family. I have time, lets say from 10pm until morning...I can arrange my time to study when I feel

like it...no one is around, everyone is sleeping and I have the entire house to myself.

-you put all the course materials for the entire semester online and post a course calendar...I

study regularly, but if I have extra time I can go ahead and read the upcoming chapters. That's

what I did for Thanksgiving, I complete all my assignments ahead of time, and I can say, I had the

week of thanksgiving off from work and school.

Busy work—Some of the participants expressed frustrations with some of the course activities.

They believed they need to work on the assignments which are congruent with their professional

responsibilities. One of the major sources of discontent discussion board activities.

-I like everything about online courses...it gives me freedom to do my school work when

I wanted at my own time. I *hate* discussion board assignments. We have to watch a video which

sometimes take 40-45 minutes, summarize it and ask two questions. Then we need to respond

to two questions asked by our classmates. It takes so much time to do this. Most of us since

don't have time keep repeating what other people said or just look up the information on

Internet and post our message.

-Discussion on discussion board is good, but it is time consuming and more points need to be

assigned to it.

-preparing presentation took lots of my time, not for collecting the information but for format

presentation. I prefer another project or just add more points to exam to cover points for this

assignment.

Being lonely—this theme emerged as it relates to several factors. Some of the participants felt

they were alone on cyberspace. They felt lonely and sometimes helpless. For some of them this was

their first experience with an online course. For others, they expected classmates or the instructor reach out to them.

-"Where is every body?" I asked myself when I logged into the course. I read your message that you introduced yourself and asked us to introduce ourselves. I guess, I was the first one there and I did not see any messages. Three days later, there were so many messages that I did not know which one to read. I saw different messages, some people talked about their pets, some about their family, some about their hospital experience...I went back and posted two other messages. But, there was no responses, no one asked who I was, Why I were there, etc...just posted messages and that it!

-When I took regular [traditional] courses on campus, I had an opportunity to make friends, form study group, etc. We were very close to each other. Here, I know who is in the course with me but we do not communicate at all. I called one of my classmates to see if she would like us study together...she said ys, but then, I did not hear from her.

-As all students that I know have said and I personally witnessed it, anytime I send you a message or question, I get a response quickly, within couple of hours. For some reasons those couple of hours seems like couple of days. Why is that? (smile)

-No one to study with...no shoulders to cry on...cyberspace is a lonely place.

-I am very active on Facebook, despite all the activities, I found social networking socially draining and depleting. I feel the same about online courses as well. How can it be remedied, I don't know!

-We have one group assignment to do. I believe it is for the purpose of working together as a team. For our group, we divided the task at the beginning of the semester. Each of us work on his/her part, and at the end of the semester, send all the pieces to one of our classmates and she combine them together. I did not see it as a teamwork!

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Learning is in question—while the course was set up according to "online best practices" and validated by the IT department at the university, some of the students were uncertain about their learning; what they learned, and what they were expected to learn.

-I completed the course and received A- in it. I feel I learned the materials but then when you asked questions during our synchronous sessions, I went completely blank…like I did not know anything about the topic!

-I feel I learned a lot, but I am not sure I know enough to take care of my patients.

-When I took traditional science class, like Med/Surg, when I was done with the course, I was sure how much I knew regardless of my grade. Here, I am not sure. I completed my assignment and completed my exams with no problems.

-I believe one of the reason that I am not certain about my learning is that, we did not have an opportunity to work in a group or directly with you. Usually, through interactions with the classmates and then discussions before and after the exams gives us an idea as how much we know. We were not able to do it here.

-I reviewed the materials but I don't think I am quite understanding the disease processes. I feel more confident when I am taking traditional courses [why do you feel that way? How did you study that you feel you were not prepared?] Well, in class, instructor explains everything for you, tells you about high and low points of the topic, asks questions and gets you ready for the exam. [why do you think the course set up did not have the components that you mentioned?] In class the instructor explains every detail, even if you did not the chapter ahead of time you can follow what they say [so, you mean you prefer to read the material to you?] not like that…but it helps a lot.

Trustworthiness

During the interview process, participants provided rich data by sharing the known and the

unknown from their perspectives. Interpretive description generates more questions from purpose driven sources, such as this study's guiding questions, which were used during data analysis. This process allows the participants' context to be uncovered in a logical, systematic, and defensible manner. A number of strategies were used in this study to ensure the trustworthiness of the data collected. Van Manen (1990) believed that we gain insight into the essence of a phenomenon through a reflective process which clarifies and makes meaning of the lived experience. In order to insure that the data accurately reflects a theme and are correctly reported, triangulation and member checking was used (Creswell, 2012). Sandelowski (1986) suggested that a qualitative study is credible when it is based on true and accurate descriptions and interpretations of the experience. Member checking was employed so that each participant was able to verify the accuracy of their interviews and provided clarification where needed by reviewing the transcript of their interview. Techniques that add credibility to research include researcher credibility, analyst triangulation, and member checking (Patton, 2002). Thorne (2008) recommended the incorporation of "epistemological integrity, representative credibility, analytic logic, and interpretive authority" (p.102) to enhance the credibility of interpretive description. Building these measures into the design for this study helped to produce findings that accurately reflect participants experiences.

Lincoln and Guba (1985) identified the four criteria of credibility, transferability, dependability and confirmability to indicate trustworthiness of qualitative inquiry. For this study, the researcher demonstrated representative credibility and interpretive authority through presentation of accurate and valid findings that reflected clearly the participants' perspectives and experiences (Thorne, 2008). In order to establish an audit trail and to maintain dependability and confirmability, careful record keeping of all field notes, memos, emerging codes and categories. Confirmability was addressed through documentation of the researcher's ongoing reflection and comparison of newfound data with findings in theoretical scaffolding from the literature. Upon completion of the interview, the researcher

penned memos and field notes citing initial thoughts, observations, and identified concepts (Creswell, 2009a; Creswell, 2009b). After data analysis, the researcher conducted a member check and discussed with willing participants identified themes. Continual comparison of data during analysis, leads to concept identification, the emergence of categories and themes, and ultimately, "constructed truths" related to the phenomena of interest (Thorne et al., 2004, p.6). Provision of such rich data allows for transferability of the findings. Thorne (2008) noted that clear description of the research setting with articulation of contextual findings provides a clear path for further inquiry. She acknowledged, however, "that many supposed accepted realities will not easily withstand the test of time" (p.229).

Discussions

The need to provide learners with an educational environment that will promote understanding and application is essential to their success, not only throughout the nursing program and state licensure examination, but also as a registered nurse working with patients (Logan & Angel, 2011). Traditional learning environments used in introductory pathophysiology and pharmacology do not promote self-direction and student engagement (Berger, 2008). Therefore, other teaching methods needs to be experimented with and evaluated.

The purpose of this study, was to compare learners' perceptions of the educational experiences in the RN-BSN program in introductory pathophysiology course, based on the enrollment track (online, hybrid, and face-to-face) in which the learner was registered. Overall, the findings from this study support findings from other similar studies. However, there is one major finding that needs further evaluations. Andragogy, constructivism, and self-directed learning were the theoretical frameworks that guided this study. The adult learning theories support active, student-centered learning. In constructivism, learners use their existing knowledge to integrate new knowledge in order to create a new way of understanding. Teachers and learners collaborate throughout the learning process; however,

activities are learner-centered. Students need to be active participants in order for them receive, integrate, and reflect on their learning. The educational theory of constructivism correlates well with andragogy. Adult learning is composed of six primary principles. According to Knowles et al. (2011) Adult learners:

    -need to understand the importance of what they are learning prior to learning it.

    -are self-directed and take responsibility for their own learning.

    -have past experiences that provide a foundation for the formulation of new knowledge.

    -are ready to learn when they need the information

    -are task oriented

    -motivated by internal factors: self-esteem, job satisfaction.

One of the main themes in these theories is self-directed learning. When applying principles of andragogy, learning activities need to promote self-directedness of the learner. Some of the findings in this study are not in line with adult learning principles. For example, participants were more satisfied with traditional teaching method because "the instructor lectured, summarized, highlighted the content for the students." Participants in the online teaching method liked the flexibility and convenience of the method but did not like the fact that the instructor takes a role of a facilitator and "there was not anyone there to lecture, summarize, highlight the content for the students." This issue was communicated by some of the participants in the blended method as well. This finding is not supported by the theories of andragogy and constructivism. An expectation was that the self-directed, task-oriented collaborative learning environment would result in satisfying experience for the learners. Also, in the traditional method, students met on campus, socialized, formed study group, established friendship, were in direct contact with the instructor. However, in an online method, they felt lonely. Even though they could communicate with the classmates via learning management system, discussion board, email, and phone, they perceived them inadequate. Being present or connected with others in

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online learning environments has been noted to impact student satisfaction with their online courses (Billings et al., 2001; & Lia-Hoagberg et al., 1999). These findings supported the relevance in identifying how faculty and students relayed being present to each other so that online learning environments could meet student needs and enhance their learning and satisfaction.

Again, self-directedness and self-motivation were not exhibited by most of the participants in an online and some of the blended method participants. It is important that these types of studies continue because they inform course design and teaching in online and hybrid courses. As noted, the amount of interaction and communication that a student experiences within an online or hybrid course can vary. Students, not surprisingly, report that interaction with faculty and classmates is more difficult to achieve online than in hybrid or onsite environments (Pugh, 2010). Despite the popularity, online coursework has resulted in lower retention rates compared to face-to-face traditional education (Varner, 2013). To discover potential reasons for the discrepancy, Nguyen (2011) compared online, blended, and face-to-face teaching and found online education results are contradictory because "educational research is often inconsistent with the use of research methods, setting, treatments, and measurement instruments" (p. 26).

Distance learning requires commitment and dedication. Students participating in distance education programs are responsible for their own learning and they need to initiate methods of communication with faculty when problems arise. Unlike face-to-face courses, distance educational faculty do not always have the ability to identify those students who may be having difficulty because the signs of students in trouble are not as apparent in distance learning environments as they may be in more traditional educational settings. Distance education students need to be willing to commit a great deal of time to their studies. Because the course work in distance learning is more intense, students need to keep abreast of their assignments and maintain adequate participation.

Online course facilitators should know their audience as well as understand their needs, backgrounds, characteristics, and expectations. Online courses must be carefully structured to allow flexibility with learner input regarding course goals and assignments, draw on learner experiences, and increase course value to the participants while staying in harmony with institutional regulations and requirements. Learners must be provided with clear expectations regarding online communication to foster interaction in the online environment.

Work of Knowles, Kolb, and others provide a useful guide by which educators and course designers can develop their online courses. Just as there is no one theory that explains how humans learn, no single theory of adult learning has emerged to unify the field. One of the caveats is generalizing the theory or theories of adult learning to ALL adult learners. For the most part, adult learning theories describe an ideal adult learner, self-directed learner, and self-motivated learner without any considerations of the learner's social, cultural, and past educational experiences. We may believe that ALL adults behave like adults in an online or traditional classroom. This may or may not be true in all cases.

This study may provide insight for nursing educators to help enhance, as well as support, their curricula and course designs in addition to fostering better student outcomes and success.

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