

Learning Styles of First-Semester Baccalaureate Nursing Students: A Literature Review

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Abstract

Learning style is the characteristic method of gaining knowledge, skill, or attitudes through study or experiences (James, D'Armour, & Thomas, 2011). Learning style addresses the approach to learning and the manner that individual learns best. Learning style refers to the distinctive method of individuals interacting with the environment. Nurses function in a challenging environment where they are required to utilize various methods of learning to process, integrate, and disseminate information when appropriate. It is important for first-semester nursing students to recognize their learning style and be able to recall knowledge gained during the clinical and classroom environment.

Introduction

Marek (2013) specified that students may be more engaged when their learning style is addressed. Moreover, Fowler (2007) stressed that the main source of learning will be in the manner in which the learner processes and reflects on experiences. In nursing, students should be able to recall instinctively the discernment, processing, and stored knowledge in different situations. In the initial preparation of first semester nursing students for clinical procedures, the students observe a procedure performed by the instructor. This procedure is then demonstrated by the student based on what was communicated. Therefore, first-semester nursing students must be able to integrate didactic with practical application in their nursing training program. This type of learning is not taught in pre-nursing courses, thus creating a challenge to beginning nursing students (James et al., 2011). Consequently, some first semester nursing students realize that the processes to study their prerequisites courses to nursing are unsuccessful in actual nursing courses. The purpose of this literature review was to examine reported learning styles among first semester nursing students in a baccalaureate program.

Caulley, Wadey, and Freeman (2012) articulated that the ways that an individual acquires of knowledge, skills, or approach their study or experiences is their learning style. Learning styles and chosen learning methods are assumed to influence students approach to learning. There is limited research and literature review on the

learning style of first semester nursing students; therefore, this article will examine other literature relevant to the topic.

Purpose of the study

The purpose of this literature review was to examine research on learning style of first semester nursing students in a baccalaureate nursing program, their influences on learning, and academic performance.

Methods

Electronic databases searched included Medline, Eric (Ebsco), Educational Research Complete, Academic Search Premier, PubMed, PsychINFO, PsychArticles, Health source: Nursing/ Academic edition, and CINAHL. The concentration of the search was to identify literature with the word “nursing students”, “learning style”, “education learning style”, “adult education”, “nursing education,” and “principles of adult education in nursing”. The author selected articles which were written in only the English language from 1982-2013 and research articles relevant to learning style and instructor teaching styles. Related research articles included original research and empirical data. Exclusion criteria included dissertations, opinions, and discussions research.

Findings

The initial search yielded over 34 articles from nursing, education, psychology, and medicine. Abstracts from citations were read for suitability, which resulted in the identification of relevant articles from education, medicine, engineering, and nursing journals. The articles identified application of learning styles and defined attributes that were relevant in this analysis. The literature review will contain the following: conceptual framework, literature review, limitations, and conclusions. Excluded were dissertations and editorials.

Conceptual Framework

According to Bostrom and Hallin (2013), there are more than 70 models of learning styles. These diverse theories and models focus on different dimensions and features of learning styles. Learning styles theorists emphasize cognitive processes, personality descriptions, talents, sensory modalities, learning processes, and thinking styles preferences of students. The method by which a student learns affects the manner in which the student reacts to a course, their attitude towards the program, and their understanding the program objectives (Alkhasawneh, 2013). Acknowledging the different learning styles in nurse education is significant for the students.

Research has varied in the number of learning style models. Kolb's Experimental Learning Style has been applied to nursing students more than any other model. Two other models that have been used in nursing are Neil Fleming's Visual, Aural, Reading, and Kinesthetic (VARK) Learning Style and Malcolm Knowles' Model of Andragogy. Gregorc's Learning Styles Inventory as well as Honey and Mumford Learning Styles Questionnaire are also briefly discussed in this paper.

Teaching intended to address a broad variety of learning styles has previously demonstrated effective learning rather than traditional teaching methods. Consequently, nurse educators should consider taking a nursing approach to learning styles, regarding them as useful heuristics for understanding students and planning effective teaching.

Kolb's (1984) experiential learning theory is a four-stage process: (1) Concrete experience; (2) Observation and reflection; (3) Formation of abstract concepts; and (4) Generalizations resulting in testing of the implication of these concepts in new situations (Cavanagh et al., 1995). To be an active learner, nursing students need to develop one or more preferences of this model. The goal is for students to identify a learning style that may express abstractness over concreteness or generalization over reflection (Manolis, Burn, Assudani, & Chinta, 2012). A nursing student needs to be familiar with one or two of the four stages to blend with professional nursing action, experience, and cognition. Cavanagh, Hagan, and Ramgopal (1995) specified significant relationships between a profession and specific learning styles, where learning styles were a reliable way learner responds to or interacts with stimuli in the learning context. The elements found in experiential learning theory are Kolb's Learning Style Inventory (Cavanagh et al., 1995).

Type 1- Diverger (concrete, reflective) - This type of learner responds to explanations of how course material relates to their experience, interest, and future careers. This individual prefers concrete experience and reflective observation. The individual has imaginative ability.

Type 2- Assimilator (abstract, reflective) - This learner prefers information in an organized, logical manner and benefits if given time to reflect. This student is less people oriented and less practical. An Assimilator has the ability to create abstract models for explaining phenomena.

Type 3- Converger (abstract, active) - This learner excels in a situation where he or she may select a single correct answer to a problem, where hypothesis testing approach to thinking is used. This individual is people oriented; therefore, has practical application of ideas.

Type 4- Accommodator (concrete, active) - This learner adapts to new situations quickly. They use perception and trial and error approaches to solve problems. They rely on information provided by others rather than the collections of data by themselves. The Accommodators are people-oriented and active learners.

Recognizing the relationship between the characteristics of a discipline and the learning styles of its members, Kolb recommends that professional learning develops all types of learning skills (Felder & Brent, 2005).

Honey and Mumford Learning Styles

Honey and Mumford's Learning Styles Questionnaire is similar to Kolb's Learning Style Inventory (Fleming, Mckee, & Huntley-Moore, 2011). However, unlike Kolb's, it allows for flexibility depending on the situation and is based on preferred learning styles. Fleming et al. (2011) continues that Honey and Mumford portray learning styles as an approach that regulates our preferred way of learning. Honey and Mumford's Learning Styles consist of four stages of learning styles, organized in a circle: (1) Activist; (2) Reflector; (3) Theorist; and (4) Pragmatist. Fleming (2009) recognized that an individual may cultivate a preference for one stage over another. He identified four preferred learning styles that correspond to each stage which are: (1) Experiencing; (2) Reviewing; (3) Concluding; and (4) Planning. The four stages and their corresponding preferred learning style are explained further in the following:

Stage 1 Activist & Experiencing Learning Style- This student is concerned with the immediate, is enthusiastic and likes to experience by getting involved in direct action. Nursing students with this preferred learning style will benefit from hands on experience.

Stage 2 Reflector & Reviewing Learning Style - This student is detail oriented, observant and evaluates from different perspectives before implementing an action.

Stage 3 Theorist & Concluding Learning Style- This student adopts a logical, systematic, and analytical approach to problem solving and may benefit from learning situations thorough which connections and relations between different learning opportunities are recognized

Stage 4 Pragmatist & Planning Learning Style- The student that reveals this preferred learning style is experimental and observe relevance in work that is performed. This individual implements a practical problem solving approach.

VARK Learning Style

VARK is an acronym established by Fleming in 1998. The "V" means visual, "A" means Aural, "R" means Read and Write, and "K" means Kinesthetic (Fleming, 2009). Fleming indicated that learners learn in various ways. For example, visual learners desire graphics, and pictures; aural learners desire listening to lectures and taking notes; reading/writing learners appreciate having notes and handouts; while kinesthetic learners desire live experiences and practice. Consequently, kinesthetic learners when exposed to variety of learning activities perform better (Fleming, 2010). Alkhasawneh (2013) speculated that nursing students learning styles change as they progress their nursing courses.

Adult Learners

Malcolm Knowles theorized that if given the opportunity, adults prefer to be active participants in all phases of the learning process and that self-directed learning provides this opportunity, encouraging students to become proactive, life-long learners (Knowles, Holton, and Swanson, 2005). Knowles identified six basic principles and applications regarding adult learners: (1) Learner's Need to Know; (2) Self-directed Learning; (3) Prior Experiences of the Learner; (4) Readiness to Learn; (5) Orientation to Learning and Problem Solving; and (6) Motivation to Learn.

1. *Learner's Need to Know.* The first part of Knowles' principle is based on the learner's "need to know". Adults can engage in cooperative planning process for their learning. This stage is a foundation to building evidence that is reliable and provides for the changes in nursing practices that have the potential for influencing outcomes in nursing educators teaching standards. Adult learners are at a stage where there is the need and want to know why they are learning.
2. *Self-Directed Learning.* In addition, adults prefer autonomy. They typically want to become self-directed learners and determine what is important for them to learn (Mihall and Belletti, 1999). In any learning situation, adults arrive with an image of themselves as self-directing, responsible grown-ups. The nurse educator must assist the adult student to identify needs and direct their own learning experience. Nurse educators have a significant role in assisting nurses to acquire skills for self-directed learning and comprehend the concept of self-directed learning (O'Shea, 2003).
3. *Prior Experiences of the Learner.* Adult learners process experiences which can be an important resource in the process of learning.
4. *Readiness to Learn.* Readiness to learn is the fourth stage of Knowles theory, where the adult identifies the desire to learn and retain the knowledge of something that may impact their life. Available literature also suggests that an adult's willingness to learn depends on whether they feel that there is a need to know. The challenge with some aspects of this practice is that skills and knowledge acquired may not be used on a daily basis (Smith, Donaldson, & Pirire, 2009).
5. *Orientation to Learning and Problem Solving.* Related to the role of prior experience in shaping learning is the role of current experiences in shaping the need to learn (Knowles et. al., 2005). Adults learn best when new information is presented in real-life context. This empirical approach to learning has become firmly entrenched in adult learning practices. Moreover, an adult should have full involvement in new here and now experiences and be able to integrate this observation into logically sound theories.
6. *Motivation to Learn.* The sixth and final stage in Knowles theory is about the motivation to learn. What motivates learners is central to their success. Discovering the incentive that motivates the adult learner to learn is thought-

provoking to the nurse educator. Bastable (2008) revealed that nurse educators must be aware of the personal vulnerability. Learning is mostly driven by internal motivation.

The field of andragogy is relevant to adult learning in any organization and might be categorized under cognitive theories, meaning that; adults are allowed to analyze the instructions given. Adult learners like to make connections between concepts; therefore, the nurse educator must be able to help the learner connect previous with current experiences.

Gregorc's Learning Style Delineator

Gregorc's Mediation Ability Theory indicates that the human mind is a network which receives and expresses information meritoriously (Duncan, 1996). Duncan continues that individuals mentally process information through this network in a peculiar way, which is called styles. The aptitude to process information through this network is termed Mediation. Well and Higgs (1990) specified that using Gregorc's Learning Style, the individual's style is stationary even though the learning environment is constantly changing. Individual learning styles are divided into four categories described as: (1) Concrete Sequential (CS); (2) Concrete Random (CR); (3) Abstract Sequential (AS); and (4) Abstract Random (AR). CS is methodical, structured, and prefers a direct hand-on experiences in a logical order. CR is intuitive and impulsive, more like a trial and error approach. AS learners prefer to receive and organize information in a logical, rationalize, and intellectual manner. AR learners are emotional and imaginative. AR learners prefer to receive information in an unstructured manner and will organize information with emotion (Joniak & Isakson, 1982; Wells & Higgs, 1990).

In reviewing different available learning styles, it is significant for the nurse educator to be cognizant of the student's learning styles and preferences. Duncan (1996) decided that nurse educators should also attempt to maximize students learning potential and include a range of teaching and learning approaches and evaluation in development of course objectives.

Review of Literature

Students learn in different ways by reflecting and acting, reasoning logically and intuitively which connect with their learning style. D'Armour, James, and Mitchell (2012) examined the learning styles of first-year undergraduate nursing and midwifery students and whether learning styles were subjective to their demographic characteristics. The Kolb Learning Style Inventory was utilized for analyzing their findings. Kolb's Learning Style Instrument has four main learning styles: (1) Converger; (2) Diverger; (3) Assimilator; and (4) Accommodator. This finding reveals that students who were from the same demographic areas had varied learning styles. According to D'armore et al. (2012), the Diverger Learning Style was dominant without

consideration to the relationship with other demographic characteristics. Most nursing students examined were resourceful, cognizant of meanings, and the value of learning. The students have the aptitude to create ideas and observe concrete situations from varying viewpoints. According to Caulley, Wadey, and Freeman (2012), integrating learning styles with learning approaches and types of assessment are effective in achieving better academic outcomes.

The author performed a cross sectional survey using the Kolb Learning Style Inventory with first-year orthopedic surgical residents. Thirteen students completed the interview and the results were examined. The results indicated that awareness of learning preferences promotes organizing learning approaches and variations that assist in the educational progression of a student.

O'Shea (2003) performed a literature review on self-directed learning in nursing education. Self-directed learning was popularized by Malcolm Knowles (1975) and Allen Tough (1979). Malcolm stipulated that adults are self-directed learners and O'Shea indicated that nurses should be motivated to take responsibility for their learning. Considering the health care environment, student nurses must be self-taught. Therefore, self-directed learning is indispensable to nursing students to function in the health care system. Ninety-nine Registered Nurses were involved in O'Shea's research. The research indicated that nurses spent a minimum of 309 hours on self-directed learning annually, but 152 hours were considered to professional learning. The author concluded that learning styles and readiness to learn should be assessed when evaluating the appropriateness of utilizing self-directed learning approaches by nurse educators.

In a pilot project, Marek (2013) appraised the effectiveness of the Visual, Aural, Reading, and Kinesthetic (VARK) Learning Style Assessment tool and the use of faculty as facilitators in the development of effective study skills for third-semester Associated Degree Nursing (ADN) students. This research was constructed on how the students' brains interpret received information through the use of all five senses and kinesthetic activities. The study noted that assessing students' learning styles are advantageous because the students are able to apply what was learned from the assessment in all areas of nursing courses. In accordance, James, D'Amore, and Thomas (2011) identified that the majority of first-year nursing students are kinesthetic learners. James et al. (2011) suggested using tutoring and lectures in the classroom. Brown and Pluske (2007) were able to associate academic success and personal learning styles.

A longitudinal study using the Honey and Mumford Learning Styles Questionnaire was given to a group of undergraduate nursing students at an Irish school (Fleming, Mckee, & Moore, 2011). In the study, 202 nursing students were observed for any changes in their learning preference in the first and final years of their nursing program. The report identified 63% of students had dual learning styles in their first year, while 53% of students favored reflector learning styles in their final year. In addition, there was a considerable difference in learning styles between the student's ages, but not in academic success. Accordingly, Fleming et al. also reported

differences in learning styles and student's ages, but there were no differences in their academic success.

Lurea, Neacsu, Safta, and Suditu (2011) indicated that if instructors' teaching styles are congruent with the students' learning styles, there would be increased success in students' academic performance. However, there is research that differs in respect to the fact that learning style does not indicate academic success because other factors are involved in learning such as age and situational factors. The research of Lurea et al. focused on learning styles of student academic performance and observation of the teaching strategies. The teaching strategies included, but were not limited to the methods used by the instructors in the courses and applicable practical activities. However, students excelled when the teacher's teaching styles were congruent with their learning styles. When this matching was present, the student's academic performance was higher. Similar findings were reported by Marek (2013) who noted that when nursing students' learning preferences were coupled with faculty mentoring, student's comprehension in the courses increased resulting in higher success.

Summary

- It is important to identifying learner's types especially those in nursing field. This ensures their achievement and retention in the profession
- Integrating student's learning styles in delivery of lecture has not been conclusively shown to be an indicator of student academic success.
- A student's ethical and cultural background has an influence on his/her learning style preferences.

There is limited literature on the learning styles of first semester nursing students, thus, creating partial understanding of how the learning styles models affect these group of nursing students. Kolb's Learning Style Instrument and the VARK learning styles are more studied in nursing profession than other models. Therefore, there is limited literature review in the interpretation and comparison to other models of learning styles.

Conclusion

Nursing students differ in various ways from the learning styles to learning preferences. Orientation to studying, motivation, perseverance, and approaches to learning will differ among the first-semester nursing students. Research also indicated that demographics and age affect the learning styles of nursing students in the first year, but there were no significant differences in the final year of nursing. Nurse educators should assess and analyze learning style profiles, study orientations, and the levels of intellectual growth of nursing students. Nurse educators should facilitate instruction to address the needs of students during the first-semester in the

baccalaureate nursing program. Adopting different teaching approaches in the curriculum design, will increase student learning, motivation to study, and may increase retention among the first-semester nursing students.

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