

A Literature Review: The Learning Style Preferences of Multigenerational Staff Nurses
and the Theoretical Consideration of Learning Style Preferences by Acute Care Educators

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Abstract

What do we know about learning styles related to the education of staff nurses? This paper explores information in the literature about the clinical nurse educator's consideration of learning style preferences in the group education of multiple generations of registered staff nurses.

Without research into the validation of learning style measurement tools and further large scale exploration of staff nurse learning styles, it is impossible to state that clinical educators should incorporate generational learning styles into their education. The current nursing workforce in hospitals spans four generations of nurses. I will explore expert opinion that suggests there are differences in attitudes toward work and learning between the generations. A search of current literature reveals ten articles that relate to my topic, only three of which contain empirical data. Theoretical articles suggest that it is important to pay attention to learning styles; however, the lack of research suggests otherwise. The authors of the empirical articles report there may be discrepancies in the findings regarding preferred learning styles. There are no research articles that provide a direct comparison of preferred learning styles within one generation.

A Literature Review: The Learning Style Preferences of Multigenerational Staff Nurses and the Theoretical Consideration of Learning Style Preferences by Acute Care Educators

Introduction

Multigenerational differences are often discussed negatively among educators and managers (White & Kiegaldie, 2011). Several articles and blogs discuss the multigenerational conflict that occurs in nursing and the belief in generation gap theory in the nursing workforce (Brown, 2013; Okoli, 2010). The concept of multigenerational differences in acute care nursing has never been more important than it is in this decade where we see four to five generations working together. These diverse groups are expected to work in a team fashion where everyone's voice is heard equally (Stokowski, 2013). The purpose of this project is to conduct an integrated review of literature that addresses the following question: "Do acute care educators consider the learning style preferences of multigenerational staff nurses when they provide group education?"

I begin with a personal narrative that situates my interest in education with multigenerational learners. This story highlights the importance of bias by clinical educators when educating the multiple generations that constitute today's nursing workforce and the pedagogical challenges this may pose. Next, I will describe the methodology used in conducting an integrated literature review. The specific research question will be identified, followed by the search methods and key terms. The literature will be analyzed and synthesized in response to the question outlined above. I will conclude with limitations of this literature review and considerations for further research.

Experiential Case Study

My interest in the topic of multigenerational differences in staff nurse education started when I experimented with an introductory assignment for staff nurses. As they entered the classroom and waited for the initiation of training on a neurology assessment tool, each person was given a 'brain quiz' where a part of the brain was named and they had to provide its location and function. The numerous resources available on the table included books related to neurology, pocket cards and flip charts, pamphlets created by the educator and an iPhone with a '3D Brain' app open. The following is an example of what I observed during each of the teaching sessions.

A young, recently hired registered nurse walks into the classroom while checking an iPhone for last minute messages. An experienced, veteran registered nurse walks into the classroom, sits down and pulls out a pen and paper. After they are seated in the room, each person is given the brain quiz and directed toward the resources available on the table. The middle-aged registered nurse pulls out a Smartphone and searches for information on the brain parts or downloads the '3D Brain' app that has been recommended, while the veteran nurse reaches for the books and the young nurse reaches for the pocket cards.

The selection of resources revealed a pattern that was a surprise to me. When I asked novice nurses why they reached for the pocket card, they frequently responded that they use their phone for social interaction all day and do not wish to use them for work related activities. At this point, it was apparent to me that many assumptions have been made about the approach used for teaching multiple generations, and I began to wonder what evidence is available in the literature to support these assumptions. I have chosen to focus on the intimation that clinical educators are attentive to individual learning styles in acute care. While there are numerous

articles that speak both positively and negatively to the inclusion of multiple generations in acute care education and management, there are very few authors who examine learning style preferences in the educational context of multiple generations of staff nurses in a group setting.

Methodology of the Literature Review

I have chosen to use the framework of Whittemore and Knafl (2005) in the approach to this literature review because both empirical and qualitative research as well as observational articles by appropriate experts in the field may be included. The integrative nature of this review process will permit the investigation of complex and diverse data related to multigenerational staff education to provide clarity to what appears to be disjointed and disconnected information about the topic (Whittemore, 2005). Integrative literature reviews allow for the exploration of theories and improved definition of concepts related to the proposed problem (Whittemore & Knafl, 2005). Furthermore, a literature review with a focused and well identified problem will contribute new knowledge to nursing practice once the information has been synthesized and presented clearly (Whittemore, 2005).

Applying Whittemore and Knafl (2005)

Whittemore and Knafl (2005) recommend a five stage process that starts with identifying a proposed problem and developing a question. The next step involves searching the literature by using distinguishable keywords. Literature relevant to the question is then evaluated for significance, value and validity and may include articles and books as well as audio or video recordings. From this point, meaningful information to the project can be analyzed for similarities, grouped together and reduced in order to extract specific themes and codes for summarization and presentation. Part of the analysis of the literature includes the identification of research gaps and recommendations for practice. Whittemore (2005) indicates that the

literature search is a crucial stage and limitations exist when inconsistent search terms are used. Therefore, it is important to clearly identify the search terms and the databases used as well as inclusion and exclusion criteria that are used during the search. In the following sections I will explore the steps of the literature review that are associated with problem identification as well as the identification of terminology used in the literature search.

Problem identification. Educators take on the responsibility of facilitating higher learning for health care providers to ensure that they maintain competency to practice. The acute care setting that has seen additional budgets and time constraints placed upon it, while at the same time the acuity of the patient population has increased and the expectations placed on team nursing have gained more depth than ever before (Lower, 2008). All of these factors directly affect patient care (Lipscomb, 2010; Okoli, 2010). Not only are educators charged with the instruction of multigenerational staff nurses in best practice recommendations but they are often assigned the role of educating other disciplines as well, such as practical nurses and health care aides.

Authors of numerous articles and books speak to managerial and pedagogical challenges within generational differences. Some of the underlying themes include the barriers of an older generation working with a younger generation, the issues of bringing younger generation employees into established businesses, the assigning of characteristics to different generations and the expectations of each identified generation (The Conference Board of Canada, 2008; Delcampo, Haggerty, Haney, & Knippel, 2011; Reeves, 2007; Twenge & Campbell, 2008). Judging by the vast number of articles revealed during a preliminary search of multigenerational work places, managing a staff mix containing multiple generations both in nursing and in other professions or workplaces appears to be a topic of interest and much debate. The same search

indicates that there are numerous resources that offer advice on recognizing learning style preferences for multiple or single generation student nurses or for managing multigenerational nurses (Earle & Myrick, 2009; Lipscomb, 2010; Okoli, 2010; Sherman, 2006; Walker et al., 2006); however, there are few articles where authors review preferred learning styles of postgraduate adult learners in the acute care setting.

Based on the case narrative presented at the beginning of this paper and the lack of resources available to clinical educators regarding learning style preferences of multigenerational staff nurses there appears to be a need for further investigation into this topic. Therefore, I am posing a question, “Do acute care educators consider the learning style preferences of multigenerational staff nurses when they provide group education?” In other words, do we have published knowledge to guide nurse educators on the use of learning styles in clinical education of post-graduate nurses?

Identification of generations in acute care. The average age of nurses in the workforce has increased almost every year over the past three decades (Canadian Nurses Association [CNA], 2012). For example, the average age of nurses in 1980 was 38 years and in 2010 the average age is mid- 40s (CNA, 2012). The implication for educators is that we are now working with nurses who have years of nursing knowledge but often lack experience with educational technology. In clinical education sessions, mature nurses are grouped with novice nurses who have grown up with a reliance on technology for social as well as scholastic interaction. Nurses educated in the 1970s or earlier were educated in nursing schools where reports were handwritten or possibly typed and have lived through the introduction of mainframe computers, the advent of nursing informatics and now face the introduction of computerized charting systems or patient care systems (PCS). On the other hand, new graduates are hoping that

computerized charting systems in hospitals will improve to the point where this is standard practice (Lower, 2008). The locutions used to identify the multiple generations identified in the current nursing workforce include the traditionalists, baby boomers, the generation X and generation Y (millennial). These terms are defined in more detail later in this paper. Once the issue of multigenerational education in nursing was determined, I had the task of determining key words that appropriately yielded articles related to the educator's observance of learning styles.

Choosing key words. A general search of articles related to the topic of multidisciplinary staff revealed that words such as 'hospital nurses' and 'multidisciplinary' used together or separately disclosed articles related primarily to the experiences of student nurses in clinical practicum. Word combinations such as 'staff nurse' and 'clinical nurse educator' rendered articles more closely related to the topic of multidisciplinary staff education. Other terms used to differentiate staff nurses from students were 'registered nurse' and 'post-graduate nurse'. 'Multigenerational' and truncated versions of this term were used as opposed to the term "inter-generational" because the latter term gives the perception of a comparison of one generation to another instead of the comparison of multiple generations. "Multigenerat*" was used consistently in all searches regardless of the other word combinations in the advanced search. In addition to multigenerational and registered nurse, other qualifying terms related to the topic included 'learning theory' and 'learning styles'.

It was important to capture literature related to acute care education. Adding search terms such as 'acute' or 'hospital' to the search did reveal literature such as how to educate staff nurses in intravenous techniques. Although using these qualifiers narrowed the list of scholarly

articles, it also excluded some relevant articles. Therefore, the only times ‘acute’ or ‘hospital’ were added to the advanced search was to narrow a long list of items.

Selection of databases. I started my search in the Cumulative Index of Nursing and Allied Health Literature (CINAHL) with the terms “registered nurse” and “educat*” which captured approximately thirty to forty articles, while a search of Google Scholar revealed the same numbers of articles with several overlapping titles. Once I had a saturation of overlapping articles by searching CINAHL, Google Scholar and several other health related search engines (Journal Storage [JSTOR], Medline with Full Text, Science Direct, Social Sciences Index and Web of Science), I refined the search terms to include “multigenerat*”, “registered nurse” and “learning style*” in every probe. Excluding any one of these key terms produced more articles, but most were not related to the topic of interest. Another pertinent database was the Education Resources Information Center (ERIC), an education related database which revealed no articles related to nursing. I also searched several nursing education journals, but found no previously undisclosed articles.

Search parameters. When defining the conditions of the searches I selected articles written in 2003 or later. Furthermore, I refined the search to articles in which the full article was available and, where applicable, newspaper articles were excluded from the search. I did use information published earlier if it related to definitions of learning styles or multigenerational attitudes in learning. The information related to generational differences and approaches to learning could be within the last three decades if the authors were recognized as known experts in the topic. I read the abstract or perused approximately fifty to seventy-five articles related to generational learning and education. Now that the search method has been discussed, I will introduce particulars related to each of the key terms.

Explanation of Terms

The search terms used for the literature search were described previously in the application of the literature review process. It is important at this time to provide some explanation of the terminology that was used to conduct the literature search. An explanation of the terms will provide further understanding into the synthesis and analysis of the pertinent information related to the learning styles of multigenerational staff nurses. The groups of terms have been divided into three areas related to: 1) post graduate nurse (registered nurse), 2) multiple generations and 3) education and learning theory or learning styles. The discussion of multiple generations will also include common labels attached to each generation.

Post-graduate nurse

The post graduate nurse is a person who has passed the necessary licensure to become a registered nurse in the country in which the article was written. The term registered nurse (RN) is generally used to describe a nurse who has passed a competency exam such as the Canadian Registered Nurse Examination (CRNE) or the National Council Licensure Examination for Registered Nurses (NCLEX-RN). The term “registered nurse” as opposed to “postgraduate nurse” or “nursing graduate” would help to differentiate registered nurses from graduate nurses who have not yet passed the competency exam. In the remainder of this paper I use the terms ‘nurse’ and ‘registered nurse’ interchangeably.

Multiple Generations

The CNA (2012) reports the average age of nurses currently practicing in Canada is 45.4 years old. The age range of nurses currently working in acute care is early 20s to over seventy years. Based on this information we can conclude that there are multiple generations of nurses working in team settings in acute care hospitals. Hospitals remain the largest employer of

registered nurses. The context of learning for each of the nursing generations has changed and evolved over the years to include increasing amounts of technology based, self-directed learning (Earle & Myrick, 2009). In the literature review by Reeves (2006) comparing attitudes across generations, the author reports vast differences in attitudes toward child rearing and family life, level of trust and loyalty, motivational rewards and career goals. Reeves (2006) also found philosophical changes in society. For example, older generations look for meaning in an idea while younger generations want to know how to follow through with the idea.

Neil Howe and William Strauss are considered the pioneers of the study of generational differences (Reeves, 2007). They have written numerous books and articles that discuss the importance of the historical recurrence of cultural and societal differences (Strauss & Howe, 1997). Major events shape a child's life especially when there is a memory associated with what the child was doing at the time of the event. Strauss and Howe (1997) believe that the cyclical nature of mankind goes back much further than a few generations and can be seen as a 'turning' or complete changeover of civilization roughly every one hundred years or 'saeculum' as it was termed in ancient times. When forecasters ignore the historic cyclical nature of history there are inaccurate predictions made about the views of the next generation (Strauss & Howe, 1997). There are lessons to be learned from this statement in the education of nursing. Educators may make assumptions about the preferred learning methods of a particular generation. On the other hand, it has been demonstrated that while the traditionalist generation was supplied information in a classroom setting and told what to do, their counterparts from younger generations are not content to learn this way.

Although there are some variations in the opinions about the years that a particular generation encompasses, the base traits of that generation have first been quantified by Neil

Howe and/or William Strauss (1991). A generation is categorized more by the similar life experiences that they are subjected to as opposed to their age or the year they were born (Delcampo, Haggerty, Haney, & Knippel, 2011; Stokowski, 2013). Paterson (2010) states that individuals whose ages are clustered at the height of a bell curve will have the most characteristics in common because they have shared similar life events. Each generation generally spans about fifteen to twenty years, although there is no absolute start and finish to a particular generation, and individuals born on the cusp of one generation may share some of the same characteristics of the generation that is next to it. On the other hand, certain catastrophic events will affect all generations that are alive at that time (Delcampo et al., 2011). The experiences of a particular generation will influence their career choices, lifestyle and even the products they choose to purchase (Delcampo et al., 2011).

Today's nursing workforce is comprised of a diversity of races, genders, cultures and generations (Moore & Taylor, 2004). Recently generational diversity has come to the forefront as a discrepancy between employees. In this paper I am examining the differences in generational learning; therefore, it is essential to provide a comprehensive description of the generations related to diversity in attitudes toward learning and learning preferences. As identified above, the four generations referred to in this review of multigenerational staff nurses include traditionalists, baby boomers, generation X, and generation Y or the millennial generation as they are commonly referred to (Howe & Strauss, 2007). While it is important not to generalize the personal qualities of any individual based on the year they were born, the literature contains numerous discussions and some empirical data related to generational differences and learning (Reeves, 2007; Twenge, 2013). Educators refer frequently to the 'generation gap' and question how they will overcome the perceived differences to impact

learning for their students (Okoli, 2010; Twenge, 2013) while other groups suggest that knowing how to apply knowledge for individuals is influenced by generational learning preferences (The Conference Board of Canada, 2008). The fifth and oldest generation, currently not in the workforce, is the 'GI generation' and this group will not be addressed in this paper. In the following paragraphs I will highlight some of the historical influences that have shaped each generation currently working and describe the characteristics that they routinely exhibit.

The traditionalists, veterans or 'silent' generation were born between the years of 1925 and 1942 to 1946 and have been shaped by the deprivation of the Great Depression as well as World War II (Delcampo et al., 2011; Okoli, 2010; Stokowski, 2013). They value changing societal attitudes and were activists in the civil-rights movements reveling in the power they had to make change (Strauss & Howe, 1997). Traditionalists are said to believe in hard work and sacrifice for the betterment of the community. They have a tendency toward fiscal restraint, dislike waste and show loyalty to the organization that they work for. It is suggested that members of this generation work well independently with direction and do not require frequent feedback of their skills. Despite their conformist traits, this group does struggle with technology, and the constant change within electronics can impart some feelings of resistance and confusion.

Baby boomers are a product of the post-war generation born between 1946 and 1964. Civil rights movements and the call for equal rights had a strong impact on their childhood as well as the Vietnam War, the 'peace and love' demonstrations from that era and the moon landing (Delcampo et al., 2011; Stokowski, 2013). Baby boomers were lovingly encouraged to make changes in the world while success in their work came to define how they perceived themselves (Stokowski, 2013). This has created a group that is extremely optimistic, but fiercely competitive. They must see the benefits of change to stimulate their creative traits and like to be

rewarded instantly with ceremonial objects such as certificates, medals and other insignia (Okoli, 2010). Individuals from this generation were raised by parents who assisted with homework and, therefore, they are comfortable with offers of help during the learning process (Paterson, 2010). It is suggested that this generation prefers educators who present as an equal to them as opposed to an authoritarian teacher-student demeanor. The technological advances witnessed by this generation are viewed as tools that are nice to have but non-essential to their work and well being (Earle & Myrick, 2009).

Generation X grew up at a time of tremendous change in technology and communication; however, they were also witness to the potential fall of every major institution (Okoli, 2010). This group was influenced by the AIDS epidemic and the fall of the Berlin Wall; however, they came to be known as a 'latchkey' generation when both parents worked to support the family (Stokowski, 2013). Generation Xers were born between the years of 1965 and 1981. They developed a distrust of institutions and an attitude of skepticism (Delcampo et al., 2011). Their upbringing instilled the characteristics of independence and innovation making them flexible workers (Stokowski, 2013). The lack of institutional loyalty has cultivated a group that puts more emphasis on work/life balance and they will negotiate to achieve this goal. They crave feedback, but autonomy is considered the best reward (Delahoyde, 2009). Once they have been provided with a clear goal, members of this generation are used to progressing through learning on their own (Paterson, 2010). They believe that the process of completing a task is not as important as the freedom to complete the task the way they choose and they are comfortable with working on multiple tasks concurrently. Members of generation X crave positive feedback and are somewhat resistant to negative comments (Paterson, 2010).

The youngest generation in the nursing workforce at this time has several names that are commonly used such as generation Y, the millennial generation or even the nexters. They were born between the years of 1982 and 2000. This group has been raised in a '24/7' society and the multiple stimuli have created a generation with the vibrancy to multi-task. They get bored easily; therefore, education that includes active and engaging activities will have a higher regard than traditional learning approaches such as lecture (Delcampo et al., 2011; Pardue & Morgan, 2008). The domestic and international terrorism that permeated their young lives has caused this generation to be somewhat protective and cautious (Stokowski, 2013). They are socially active and are thought to prefer group work when possible. Most of the individuals in this generation want their work to be meaningful and value contributing to a bigger picture. On the other hand, 'the millennials' demand an immersive orientation and immediate feedback. Guidance is expected with any project and they rely heavily on technology (Delcampo et al., 2011). The imposed structure with parents who have hovered over them has created a generation that is willing to accept authority; however, they lack the ability to structure their own schedule well (Pardue & Morgan, 2008).

Despite the short period of time the millennial generation has been in the job market, they are a large, albeit disparate group and their values and needs will differ. Regardless of the possible narcissistic attitude that was initially reported, this group is globally aware, more involved in charitable interests and more committed to marriage than previous generations (Delcampo et al., 2011; Lower, 2008). It may surprise baby boomer nurses to know that members of the millennial generation subscribe to moral behaviors, both personally and socially (Delcampo et al., 2011; Paterson, 2010). Ubiquitous technology has effectuated this group as information gatherers; however, problem solving appears to be a weakness overall. They both

expect and appreciate when technology is used in education (Earle & Myrick, 2009). Millennials communicate well with the traditionalist generation and share similar values and work ethic. Members of the millennial generation are avid learners and they listen to what educators have to say; however, they are used to getting information in small parcels and require frequent breaks (Lower, 2008).

One of the most obvious differences between generations is the varied communication styles (Stokowski, 2013). Communication preferences between the educators and members of multiple generations may have to be varied and can include all of the following methods of delivery: verbal, written notes and technological communication (Sherman, 2006). Communication preference will impact the acceptance of feedback whether the educator is providing praise or criticism. According to Twenge (2009) the millennial generation has difficulty accepting constructive feedback and clear communication and respect is a way to ensure dialogue during evaluation. Another difference that may create conflict between generations is varying attitudes toward advancement. Generation X believe that positions should be granted based on capability rather than the length of time on the job while the millennial generation want to share their skills early in their career and be recognized for the talents they possess (Delcampo et al., 2011; Wilson, Squires, Widger, Cranley, & Tourangeau, 2008). In contrast, traditionalists want recognition for being long-term employees and the expertise they have accumulated, while baby boomers prefer recognition for the hours of dedication they bring.

Research completed by Wieck, Dols, and Northam (2009) indicated that incentives that delivered job satisfaction and retention in nursing varied extensively between three generations. Wieck, Dols and Northam (2009) examined job satisfaction between generations and found that

the younger generations were less interested in benefits that provided education time and more interested in flexible scheduling and improved work environments. Another significant difference between the generations includes the loyalty to a particular job or institution. The younger generations want to feel valued and without the opportunity for professional growth, control over the course of their career and increasing responsibility they are likely to resign while baby boomers and traditionalists maintain loyalty to a job, boss or institution (Lower, 2008).

Critique of generational diversity. Although there is agreement that individuals are shaped by certain events that have changed their perspective of the world, it must be reiterated that there are many other factors that influence a person's way of thinking and learning such as race, ethnicity and culture (Reeves, 2007). Twenge (2009) suggests that 'generation' is simply a useful proxy for socio-cultural environmental differences during childhood; therefore, we cannot expect someone who was born in a particular year to exhibit most or all of the characteristics of that generation (Reeves, 2007). Much of the data on generational differences has been extracted from a middle and upper class North American population, particularly from the United States (Reeves, 2007). Research conducted on generational differences has been criticized for the lack of reliability and validity, while the survey locations tend to exclude lower income groups without access to online technology (Reeves, 2007). The information received from surveys is tenuous at best. According to Reeves (2007) there are no surveys that examine generational differences across a full range of socio-economic status. Therefore, the information may not be transferrable to other cultures (Twenge, 2009). White and Kiegaldie (2011) believe that many of the claims related to the millennial generation are the result of findings by marketing companies that encourage the belief that this generation is a subculture of current society. The authors

maintain that claims suggesting the latest technology is the only way to retain this generation are not substantiated by research.

Furthermore, when researching differences, it is more important to know how many years separate two individuals than what generational label they have been given. Howe and Strauss (2007) suggest that there is a cyclical pattern to generational differences; however, the data used to make these conclusions was based on crime rates, birth rates and divorce rates among other information and may not accurately reflect generational changes depending on historical record-keeping (Twenge & Campbell, 2008). Generational differences do not take into account the values that have been passed on by parents over numerous generations (Twenge & Campbell, 2008).

While it must be recognized that there is criticism of the generation gap theory, it is worth considering the acknowledged differences among professional workers such as nurses (Reeves, 2007). It is important to be aware of differences in attitudes toward the balance of work and home life as well as attitudes toward learning. Further, the use of generational terms in educational contexts requires nurse educators to be both aware of these generational terms and the critiques surrounding their usage. Up to this point, I have provided an overview of the terminology related to post graduate nurse (RN) and generational theory. In the following paragraphs I will explore the assumptions and investigations surrounding learning styles.

Learning Styles and Learning Theory

It is assumed that all learners have a preferred learning style related to their understanding and retention of information (Smith, 2002). Scott (2010) contends that the valuing of individuality in Western culture permeates many aspects of society including education. Learning styles consider individuality related to the way a person takes in, processes

and incorporates information into their lives. It has long been recognized by educators that the traditional style of teaching (regurgitation by teacher and assimilation by student) do not work for all learners (Coffield, Moseley, Hall, & Ecclestone, 2004). Learning style theories provoke an examination of teaching methods that have remained status quo for many decades. Learning styles are thought to change over the life of an individual, while some students are flexible enough to try varied methods and adapt to them as a way of learning (Delahoyde, 2009). When the learner is not restricted to a single preferred style of learning, incorporating knowledge will be more effective (Loo, 2004). Gregorc (cited in Coffield, Moseley, Hall, & Ecclestone, 2004) , whose 'Gregorc Style Delineator' is similar to Kolb's 'Learning Style Inventory', believes that it is important to align education to the adaptive learning abilities of the student.

The theory commonly subscribed to in nursing education is that of the 'Adult Learning Theory' introduced by Malcolm Knowles (Mollon et al., 2012). Adult Learning theory looks at the way adults learn and concludes that individual experience is the key to adult education. The motivation to learn is cultivated when experiences induce a need to know (Knowles, 1978). The theory suggests that adult education must make provisions for differences in lifestyle and life experiences. Adult Learning theory is a concept that does not differentiate types of learning in the adult population but generalizes adult learning characteristics or andragogy to distinguish it from the education of youth or pedagogy (Knowles, 1978). The most frequently mentioned theories of adult education and learning theory found in this review of the literature are those of Knowles theory of adult learning principles and Bloom's taxonomy of learning. How individuals learn appears to be as personal as the style of clothing that one wears. Learning styles have gone through a transition of assumptions where learning was considered a 'duty', to

a more open view where learning can be considered autonomous, interactive and enjoyable (The Conference Board of Canada, 2008).

There are several theories related to learning styles; the more common theories mentioned in nursing include Kolb's Experiential Learning Theory, Dunn and Dunn's Learning Style Model and Curry's Onion Model. There have been few attempts to connect common concepts across models of learning theory and, therefore, it is difficult to speak about learning styles collectively (Scott, 2010). Furthermore, information about learning styles is commonly linked to the exploration of personality and cognitive differences (Smith, 2002). On the other hand, Curry's (cited in Patterson & Pratt, 2007) Onion Model of Individual Difference attempts to generalize learning style theories into layers. A review of learning styles by Coffield, Moseley, Hall, and Ecclestone (2004) suggests that they can be divided into three main areas: that is, theoretical, pedagogical and commercial. The same authors identified 71 models of learning styles. A cursory review of internet sites related to learning styles by Scott (2010) showed that sites that favored the use of learning style theories far outnumbered the ones that were critical of the learning style tools available. Kolb's Learning Style Inventory tool (1984) and the Learning Style Inventory by Dunn and Dunn (1978) are two widely known commercial tools (Coffield et al., 2004). In the following paragraphs I will discuss the three most familiar theories of learning style by Dunn and Dunn, Kolb, and Curry.

According to Dunn and Dunn (1978) the investigation into learning styles began when it was noted that some 'youngsters' achieved more success in learning with certain methods while others did not (Dunn & Dunn, 1978). The authors go on to suggest that each student learns differently in the same class. They identified eighteen factors that affect learning and divided them into four categories that included immediate environment, emotionality, sociological needs

and physical needs. The research that was conducted by Dunn and Dunn (1978) also pointed out gender differences from elementary school to high school. Although the foundational research is directed toward examining the learning styles of school aged children there are implications for the study of adult learning styles and the differences between the learning styles of each generation. The learning style tool developed by Dunn and Dunn included both children's and an adult tool (Delahoyde, 2009). Both the adult and children's detailed tool measured the impact of the environment (light, sound, etc.), emotions, sociological aspects, physiological and psychological variables such as perceptual strength, time of day and mobility (Dunn & Dunn, 1978). Dunn and Dunn (1978) believed that knowledge of preferred learning style accompanied by an instructional package for maximizing learning could assist with academic success. Learning preferences were measured and considered more important than learning strengths (Coffield et al., 2004). The model by Dunn and Dunn ascertains that the older the student, the more external environmental factors such as light, sound and design affect learning (Coffield et al., 2004).

A few years later Kolb suggested that learning is a process that combines experience, perception, cognition and behavior. He built on the work of Dewey and Piaget with his 'Model of Experiential Learning' (Kolb, 1984). Kolb described learning as being cyclical and rooted in experience with four didactic modes of learning that follow a horizontal and vertical continuum (Delahoyde, 2009; Loo, 2004). He later went on to add a third dimension to learning theory that extended up from the continuum (see Appendix A). Due to the prevalence of Kolb's (1984) Model of Experiential Learning in nursing literature, a brief summary is provided.

Kolb's (1984) dimensions demonstrate extremes of preferred learning and suggest that all individuals manifest a preferred learning style. The modes of learning ability include

concrete experience (CE) at one extreme opposite that of abstract conceptualization (AC). The learning process that intersects these ways of learning is reflective observation (RO) on one hand as opposed to active experimentation (AE) at the other extreme (Kolb, 1984). Concrete experience describes the human interaction and the emotional, intuitive approach to learning. Abstract conceptualization is the imagined, systematically planned idea that does not include the human element of learning. Reflective observation focuses on descriptive learning and the ability to visualize a situation from several points of view, while active experimentation embraces active participation in learning and values the philosophy 'learn to do by doing'. The four quadrants that are created by the axis of the two continuums become the suggested preferred learning styles (Kolb, 1984). These learning styles include the diverger, the assimilator, the converger and the accommodator. Kolb describes the diverger on the vertical axis as a concrete learner who uses reflective observation and practical application. The concrete learner is more intuitive and works well in an unstructured environment. In opposition, the assimilator is an individual who learns best through abstract conceptualizations. Abstract learners value rigor, systematic planning and accuracy.

On the horizontal axis, the converger learns abstractly with active experimentation. They can apply theory to problem solving techniques while being impartial and considering various points of view. Individuals with this style of learning prefer to rely on their own thoughtful judgments. On the other end of the axis is the accommodator who prefers to learn through participatory trial and error. They are concerned with a working solution and value accomplishment of the task and its outcome to the environment. Kolb assessed learning styles with a tool called the Learning Styles Inventory (LSI) and based on preferred learning style he identified appropriate learning/teaching methods (Loo, 2004). The Learning Style Inventory tool

became the most frequently used learning style tool for nursing students (Delahoyde, 2009).

Kolb describes learning as more of a process than a final outcome (Coffield et al., 2004).

According to Kolb (1984), learning that is based on outcomes stifles creative learning which he describes as “the major process of human adaptation” (p32). Although learners who exhibit all four kinds of learning abilities are more effective, knowing how to adapt preferred learning styles to a situation will also benefit the learner (Paterson & Pratt, 2007; Smith, 2002). The key to effective use of learning styles is when the learner has some awareness of how they learn and the educator uses this knowledge to the advantage of both the student and educator.

Many researchers perceive that Curry’s Onion Model is a practical way to present a montage of models (Coffield et al., 2004). Paterson and Pratt (2007) summarize the Curry Onion Model by stating that the outermost layer examines observable preferences for learning based on social and environmental factors, the next layer considers the socio-cultural context of learning, the third layer explores the processing or independence of learners to analyze new information while the fourth layer contemplates the role that individual personalities play in the preference to learn.

Other learning style tools such as the ‘Myers-Brigg Type Indicator’ focus more upon personality characteristics than learning styles (Coffield et al., 2004). The development of this particular tool was based on observation rather than theoretical refinement.

Critique of learning styles. Several of the internet sites that promote the use of learning styles have commercial interest in the use of these theories (Scott, 2010). Unfortunately, the commercial nature of these instruments means the authors do not always welcome a critical review of the tools (Coffield et al., 2004). It must be noted that researchers of learning style

measurement instruments usually have a specific purpose or context in mind when the instrument is developed. This knowledge by itself brings into question the professional usefulness of learning style theory. Furthermore, the inventory tools are not considered a completely accurate assessment of learning (Paterson & Pratt, 2007). Rather than assessment or diagnosis, the results of a learning style inventory should become the base for the student and teacher to dialogue about individual learning experience (Paterson & Pratt, 2007)

Additionally, there may be some harm in labeling a learner as having a particular style of learning. When pedagogy is adapted to the learning style of the group being educated, the educator does not challenge the creative thinking of the student. The dichotomous nature of learning styles infers that students are ultimately one type of learner or another (Coffield et al., 2004). For example, a learner may be considered a converger versus a diverger, a pragmatist versus a theorist or a concrete versus abstract learner. Furthermore, when students in a group are from varied cultures, the proposed style of teaching may not have the same impact on international students (Scott, 2010). On the other hand, proponents of learning theory could argue that the reflective feedback provided in most classrooms that subscribe to learning style theory lead to critical review of assumptions about students and contributes to the overall education process for both students and teachers. The use of learning styles can also prevent a particular student from being typecast as having a specific personality by allowing the exploration of changes in the way they learn (Herzberg, 2006).

At this time there is no empirical evidence to suggest that instruction should be tailored to individual learning styles (Paterson & Pratt, 2007; Rohrer & Pashler, 2012). A review by Coffield et al. (2004) suggests that independent, critical research that use control groups is required in the field of learning styles to prevent bias. The logistics of assessing the learning

style of individual students is extremely demanding and most likely overwhelming for most institutions. Scott (2010) also suggests that learning styles can interfere with expanded exploration of evidence-based practice in education, due to the subjective nature of the many learning style tools available. The author argues that research into education should be less about the student individual learning and more about the effectiveness of various methods of teaching. Additionally, many of the learning style inventories require the student to provide the first and most instinctive response to a question. However, the first response may not be the most accurate for some learners who require time for careful reflection of their reply (Coffield et al., 2004).

Up to this point, I have communicated my intention to examine the literature for clinical nurse educators' awareness of learning styles in multigenerational staff nurses, reviewed the methodology for exploring this issue and provided detail related to the terms "staff nurse", "multiple generations" and "learning style". Moving forward, I will identify the findings of the literature review by providing a synthesis of the information and an analysis of the findings. In conclusion, I will provide limitations of this literature review, its implications for nursing education in acute care and propose future research topics related to multigenerational education of nurses.

Synthesis of Information

The systematic search described previously resulted in the identification of ten articles in which authors discuss both multigenerational differences and learning styles as they relate to the education of acute care staff nurses. The range of publication dates is from 2003 to 2012. Specialties in nursing included perinatal nursing, medical nursing, critical care, cardiac care as

well as the online education of registered nurses attempting to complete either a bachelor or masters degree.

While reviewing articles where generational differences were mentioned, I used different colored highlighters to identify the four generations being examined. The colors used were pink for the traditionalists, yellow for the baby boomers, blue for generation X and green for the millennial generation. Information was highlighted if it was pertinent to a particular generation and had not been mentioned frequently in other articles that had been reviewed. The color coding helped to indicate the particular generation being discussed in the text.

Synthesis and findings of data

In accordance with Delahoyde (2009), I too found there is very little information in the literature related to preferred teaching methods of nursing students and there is even less information available on the preferred teaching methods for post-graduate nurses. An overview of the ten identified articles in a table format (see Appendix B) summarizes the content of these largely theoretical articles. The three quantitative studies that have been included do not focus on staff nurses but extrapolate information to multigenerational staff and are primarily aimed at nursing students and testing the learning style preference of students.

One way to evaluate data in a literature review is to look at the underlying themes or patterns that emerge (Whittemore, 2005). However, there is also benefit in reviewing articles from the perspective of theoretical versus empirical research because future research questions can be explored to suggest why or why not a particular topic should be investigated (Cronin, Ryan, & Coughlan, 2008). It is with this understanding that I will examine the articles that are theoretically based and conclude with knowledge generated about the topic using quantitative designs.

A synthesis of knowledge from the theoretical perspectives (i.e. not research) and findings from three quantitative studies are presented. Overall, the theoretical authors reviewed agree that generational learning styles and learning style preferences are important factors in multigenerational nursing staff education (Bridges, Herrin, Swart, & McConnell, 2014; Gallo, 2011; Harton, 2007; Hertel, 2008; Johnson & Romanello, 2005; Paterson, 2010; Sherman, 2008). Similarly, Bridges et al. (2014) suggests that individual learning styles are important; however, they provide no particular information on learning styles or learning style preferences. Most of the articles reviewed provide detailed information on the generational differences. Harton (2007) provides specific analysis of the four phases of learning and makes suggestions for a framework of learning within a mixed age group of staff nurses, but does not go so far as to individualize them into generations.

Authors of articles related to conceptual education of multigenerational staff cautioned educators and managers to treat all generations with respect and to use clear communication to reduce the perception of bias. Gallo (2011) and Paterson (2010) include advice that correlated preferred learning and teaching styles with each generation. Harton (2007) states that despite the age category of the nurse, experiential education remains the most effective way to ensure scaffold learning that is incorporated into daily nursing. Despite statements that make specific claims about the education of multigenerational staff, several of the authors include caveats that suggest that the best way to provide education is with variety in the methods and materials (Harton, 2007; Johnson & Romanello, 2005; Paterson, 2010) and that the educator should avoid stereotyping (Hertel, 2008). Furthermore, it is suggested that the educator prepare by familiarizing themselves with the predominant ages of the group they are instructing and tailor the instruction to suit that generation (Johnson & Romanello, 2005; Paterson, 2010).

Empirical evidence examining learning styles and multigenerational nurses was scant. As mentioned previously, only three quantitative studies were found that examined learning styles of multigenerational registered nurses. Robinson, Scollan-Koliopoulos, Kamienski, and Burk, (2012) used a cross-section survey to explore whether there is an association between generation group and preferred learning style. They found that each generation showed a preference for diverger as per Kolb's learning style inventory, although during correlation calculations generations appeared to have less connection to learning style, current enrollment in classes, number of years since last formal education and number of years in practice. There were identified limitations in the test population that indicated older generations had less nursing experience.

Two other studies using descriptive quantitative designs (Lohri-Posey, 2003; Smith, 2010) examined learning styles and generational learners. Lohri-Posey, (2003) focused on 27 baccalaureate nursing students, including 17 registered nurses in the RN to BSN program whose members were from different generations. The authors found that sequential learning was preferred most often and students were given a guide to assist with personalized learning. At the same time, Lohri-Posey (2003) did not provide a breakdown of learning preferences for each generation and reported only that the majority of the students were 'active learners' (sensory). The research by Smith (2010) also used a descriptive cross-section survey with 217 nurses and concluded that "the predominant learning style among the 217 RNs enrolled in online nursing courses was accommodator" (p 51). The percentages found for each of Kolb's four learning styles were not widely separated and there was no analysis of variance conducted. Furthermore, when each decade of age groupings was separated there appeared to be an insignificant difference between learning style preferences based on age differences.

Robinson et al.'s (2012) cross-sectional survey provides evidence that is the closest to answering the question in this literature review. They examined whether one's generational group impacted the personal learning style of hospital employed RNs and LPNs. They found that the overall learning style preference for the 122 nurses sampled was that of diverger with a trend toward assimilator. While diverger falls into the same continuum as accommodator under concrete experiences, the trending to assimilator is an opposite result than that of (Smith, 2010). Robinson et al. (2012) were careful to examine variance and were able to show an inverse significant relationship to generation and learning style, current schooling, number of years since their last formal education and number of years as a nurse. On the other hand, there were no insights into the type of education currently used with this group of staff.

If I were to attempt to relate the summary of articles to the research question that directly asks if educators pay attention to the learning styles of multigenerational staff nurses, I would conclude that some educators concern themselves with the topic, although very few educators transcend theory to associate teaching methods with preferred learning styles of the registered nurses. In general, the literature reviewed indicates that much of the information reported on the learning styles of multigenerational staff nurses is theory-based and written to offer suggestions to educators and managers. Research that has been conducted is directed to the learning styles of the students themselves, but does not include a correlation to the educator's awareness of class differences. From the literature that has been reviewed I intend to probe into the reasons for this oversight in our nursing research.

Discussion. Why are generational differences just starting to have an impact on our study of society and in particular education? When examination of learning styles was brought to the forefront in the 1980s and 1990s, there was less attention paid to the way different generational

groups learned and more attention paid to individual learning traits (Smith, 2010). Neil Howe and William Strauss were just starting to publish their findings and theories on generational differences. Educators speculated on the different attitudes to learning; however, students were expected to conform to established ways of teaching. The expectation is that the younger generations will change jobs frequently and are not necessarily loyal to one institution. Retention of employees requires a change in the way education is offered. Delcampo et al. (2011) claims that each generational group exhibits learning style preference; therefore, a variety of methods are required to meet the needs of multigenerational staff. The theory-based articles in this literature review support this suggestion.

To return to the point of this literature review, I will repeat the question “Do acute care educators consider the learning style preferences of multigenerational staff nurses when they provide group education?” The extensive search revealed very few articles that probe this question with any depth. This suggests that although clinical educators view generational differences or learning style preference as important concepts to consider in group education very few leaders in education examine the two concepts together. When one concept is explored, the other one tends to take a back seat to the main topic. For example, Bridges et al. (2014) acknowledges that there are learning style preferences, but focuses on the generational differences in learning. On the other hand, Harton (2007) refers to novice versus experienced learners, but attends more to the act of learning and a proposed framework for assisting novice nurses. Other authors described preferred methods for teaching multiple generations without elaborating on the source of their conclusions (Gallo, 2011; Hertel, 2008; Johnson & Romanello, 2005). Of the articles that focus on generational differences in learning, the sub themes of the learning style concepts vary from characteristics that are specific to each generation (Paterson,

2010), preferred methods and environment for teaching (Hertel, 2008), generational preferred learning style (Gallo, 2011; Johnson & Romanello, 2005; Robinson et al., 2012; Smith, 2010) and ways to manage (Sherman, 2006).

Of the three articles that provided empirical data related to learning style preferences of multiple generations, the information is too insipid to form a reliable opinion about the preferred learning styles of a particular generation. Lohri-Posey (2003) recommends that the educator target both group and individual learning style preferences. There was some congruency of findings between studies done by Robinson et al. (2012) and Smith (2010) where it was reported that younger generations showed a learning style preference toward assimilator. This is an indication of intuitive learning and the perseverance to apply ideas in practice (Kolb, 1984). On the other hand, both authors showed conflicting data in the overall learning preference of the groups they were studying. Smith (2010) showed a finding of accommodator as the most common learning style while Robinson et al. (2012) reported diverger as the most common learning style. Although the two learning styles follow the same plane toward concrete experience, they differ in their trending toward either reflective or active participation. The main difference between these two studies is that Robinson et al. (2012) examined 122 nurses employed in acute care while Smith (2010) explored the learning styles of 217 registered nurses returning to school either as an RN to BSN or as an RN to MSN and applied some cross-tabulation to the survey findings to look for trends. The learning situation between the two groups being studied is not equal and attitudes toward learning could be disparate between them.

Robinson et al. (2012) went so far as to suggest that abstract styles of teaching be used for younger groups and concrete experience be used for older students. Furthermore, as with the theoretical articles, all three quantitative articles concluded with recommendations to include a

variety of teaching methods to accommodate all learning styles. This would suggest that, first, there are perceived differences between generations of nurses and their preferred learning style and, second, that it is difficult to narrow down the choices of teaching methods to be inclusive of all generations.

There are no two articles (Bridges et al., 2014; Gallo, 2011; Harton, 2007; Hertel, 2008; Johnson & Romanello, 2005; Lohri-Posey, 2003; Paterson, 2010; Robinson et al., 2012; Sherman, 2008; Smith, 2010) that are equally comparable in this examination of the literature. Based on this literature search and the lack of available information corresponding to the literature review question it would be justifiable to infer that clinical educators do not pay attention to the learning styles of multigenerational nurses. The next query would be to ask why this is illustrated in the literature. Do we simply have a lack of published data related to staff education in acute care? There are numerous journals devoted to clinical care such as *Critical Care Nurse*, *Journal of Clinical Nursing*, *Journal of Nursing Education and Practice*, which would be appropriate avenues to publish research related to the learning styles of multigenerational acute care nurses. Have disparities in past research deterred nursing researchers from developing a thorough investigation into the topic? That is one possible rationale for the lack of data. Without evidence to support or disclaim the use of learning theory in the education of staff nurses it is impossible to make a statement about the application of learning styles in ongoing education.

Limitations of Literature Review

It must be repeated, although it has been stated already, that broad statements have been made that create assumptions about individuals of a particular generation. Many experts in generational discourse subscribe traits to individuals of a particular generation. These statements

may be false and educators are advised to get to know individual students before presuming that someone of a certain generation will behave in a particular way. It is important to stress that no one should over-generalize an individual's character based on the generation they are attached to. There is overlap between generations depending on the years the individual was born and people who straddle two generations will exhibit behaviors of both. Although there is evidence to suggest there are generational differences, there may be more discrepancy within the generations than differences between the generations (Reeves, 2007). Stokowski (2013) also suggests that it may be difficult to determine whether certain characteristics are a result of the generation that person is assigned to or a cohort effect based on similar experiences and careers. Learning style theory largely targets individual learning preferences and inferences that generational groups have a learning style preference may be outside the intention of the authors of various learning styles. Despite the limitations that were revealed when reviewing generational differences and learning style theory in this literature review, these two factors should be considered in the education of staff nurses.

Considerations for Education of Staff Nurses

First and foremost, this literature review brings an awareness of generational differences to clinical nurse educators. However, it is difficult for nurse educators to prepare when there is so little research available on learning style theory and its influence on problem based learning.

In the meantime, when considering the demand for active learning in multigenerational nurses, particularly in the younger generations (Pardue & Morgan, 2008), learning and assessment tools such as human patient simulators or other non-digital interactive games are expected to be an ideal medium for teaching skills based tasks and for incorporating alternative strategies in both urgent and non-urgent situations (Earle & Myrick, 2009).

Nurses from the millennial generation value the contributions they can make and are a keen group to target in assisting with staff education. Perhaps in nursing where there are a variety of educational approaches such as classroom, skills based, experiential (simulation) and didactic interaction we have already created a flexible group of learners that adapt their learning style to every pedagogical approach.

Considerations for further research

When nursing research is completed related to learning styles, it is frequently directed at nursing students (Delahoyde, 2009; Earle & Myrick, 2009; Pardue & Morgan, 2008; Walker et al., 2006). Furthermore, most of the articles are theoretical making it difficult to endorse specific opinions about learning styles in the education of multigenerational staff nurses. Analysts who predict that there will be nursing shortages and more complex patients are imploring hospitals to improve education aimed at the retention of nursing staff.

The lack of empirical research into learning styles as well as some of the inconsistencies in findings noted in this literature review suggest that more studies are needed that look at variance of the numbers to determine validity of the results. Empirical studies that authenticate the learning style inventory, as well as studies that examine staff nurse learning styles, are required before educators champion learning style theory in knowledge translation. Once the measurement tool is validated, larger sample sizes in more than one location would produce more reliability in the data. Information from a number of sites could be cross-tabulated to determine variation in learning styles at different locations. Factors that may play a larger role in learning style preferences such as race, gender and culture can be adjusted for in large research trials.

Conclusion

I am encouraged by the research that I have done into generational differences because I can see that the new generations entering the workforce have high moral values and a strong sense of family and community. This gives me hope that they will continue the 'art and science' of nursing in a way that promotes both caring and practical decisions regarding the future of health care.

The investigation into learning preferences related to multigenerational staff was disappointing. There has been so little research into the use of learning styles in staff nurses that it is challenging to make any conclusive statement about the pros and cons of learning style use in clinical care education. While there are many theory based articles that proclaim that learning style theory is important in the education of staff nurses, there is little empirical data to support these claims.

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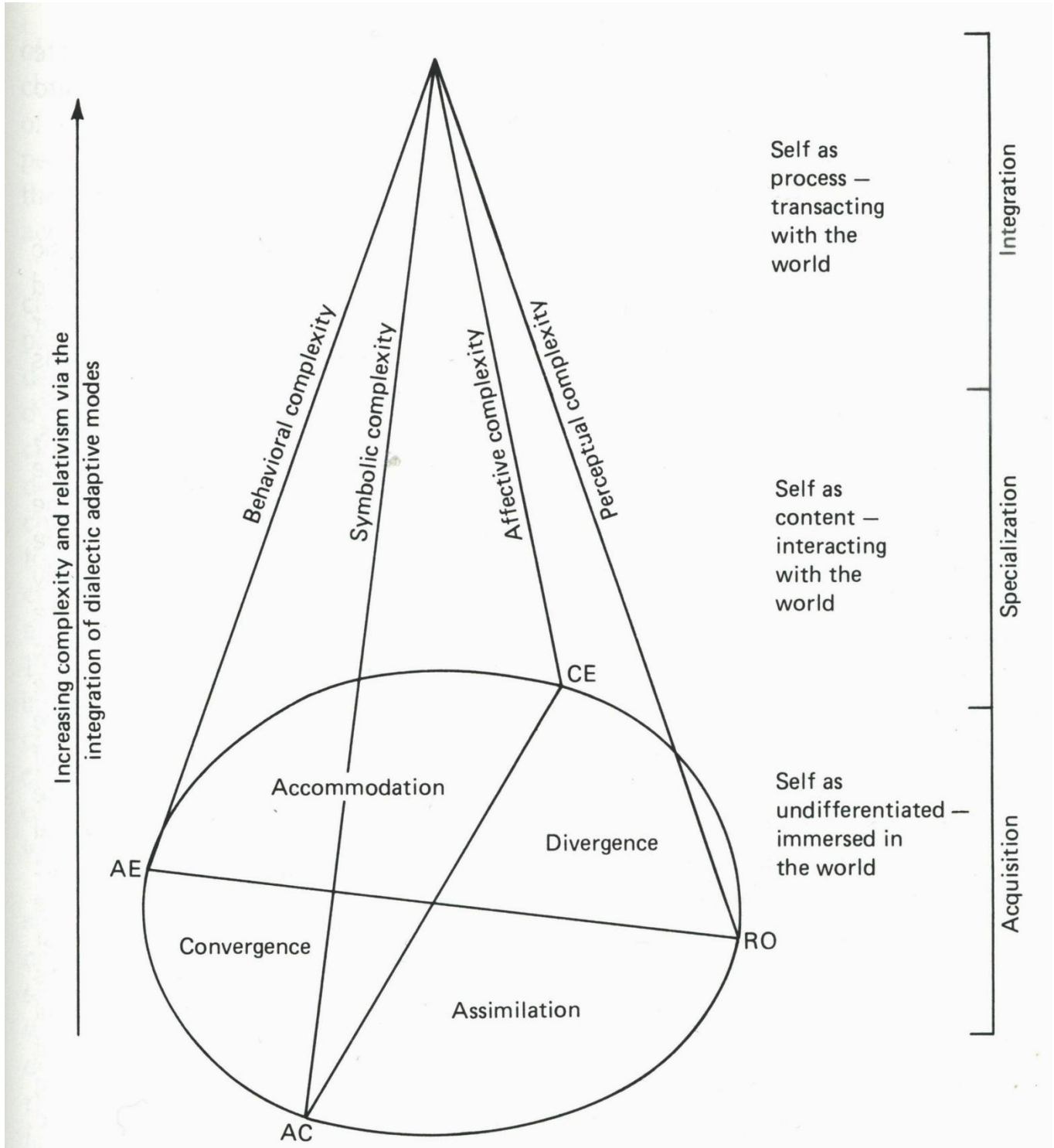
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Appendix A

The Experiential Learning Theory of Growth and Development. (Kolb, 1984, p. 141)



Appendix B

“Do acute care educators consider the learning style preferences of multigenerational staff nurses when they provide group education?”

Summary of the ten articles that fit the criteria for the research question are summarized the in the table below.

Title of the article/author	Type of Article/Central Thesis	Focus on learning styles/theory	Focus on generational differences	Focus on education methods/Key findings
<p>Bridges, R. P., Herrin, D., Swart, T., & McConnell, M. T. (2014). Creating an innovative educational structure to support best practice among novice nurses. <i>The Journal of Continuing Education in Nursing, 45</i>(2), 60-64. http://dx.doi.org/10.3928/00220124-20140122-02</p>	<p>Theoretical</p> <p><u>Central thesis:</u></p> <p>Generational differences must be considered in the educational structure for novice nurses</p>	<p>Suggests that individual learning styles are important considerations in group learning but does not provide detail</p>	<p>Describes the difficulty of opening a new unit with predominantly novice staff</p> <p>Brief overview of generational differences</p>	<p><u>Key points:</u></p> <p>Encourage educators to recognize generational differences and avoid phrasing questions that may be offensive to some generations</p> <p>Different educational methods and presentation strategies were employed to reach the differing generations</p> <p>Education events were structured as case studies, formal class with framework to support critical thinking and topic discussions</p> <p>Novice nurses were encouraged to lead case study reviews</p>
<p>Gallo, A. (2011, April/June). Beyond the</p>	<p>Theoretical</p>	<p>Suggests that each generation has a</p>	<p>Describes characteristics of</p>	<p><u>Key points:</u></p>

<p>classroom: using technology to meet the educational needs of multigenerational perinatal nurses. <i>The Journal of Perinatal and Neonatal Nursing</i>, 25(2), 195-199. http://dx.doi.org/10.1097/JPN.0b013e3182163993</p>	<p><u>Central thesis:</u> Nurse educators must consider the learning style of each generation</p>	<p>preferred learning style Includes table with preferred teaching style per generation</p>	<p>different generations</p> <ul style="list-style-type: none"> • Influences • attitudes toward authority • Learning and technology 	<p>Nurse educators need to effectively communicate awareness of generational learning style preferences</p> <p>Review four types of teaching styles</p> <ul style="list-style-type: none"> • Classroom • Online (access is key) • Webinars (improved access) • Simulation <p>Suggest that continuing education (ie competency) focuses on patient safety and evidence based practice</p>
<p>Harton, B. B. (2007, November/December). Clinical staff development. <i>Journal for Nurses in Staff Development</i>, 23(6), 260-268.</p>	<p>Theoretical <u>Central thesis:</u> The educator is responsible to plan the attainment of knowledge to improve retention and application of concepts</p>	<p>Discusses four phases of learning:</p> <ul style="list-style-type: none"> • Attenuation • Retention • Reproduction • Motivational <p>Uses a framework for learning based on a revised Bloom’s taxonomy</p> <ul style="list-style-type: none"> • Factual • Conceptual • Procedural <p>Metacognitive</p>	<p>Broadly mentions adult learning and the life experiences that staff bring</p> <p>Does not discuss generational differences but refers to the differences of novice learners struggling to link knowledge to practice as opposed to older learners who may not be interested in cognitive development</p>	<p><u>Key points:</u></p> <p>Facilitation of learning outcomes based on individual learning needs</p> <ul style="list-style-type: none"> • Experiential <p>Base teaching methods on an assessment of learning styles and readiness to learn</p> <p>Suggest using a variety of materials and methods including written case studies for simulation</p> <p>Use a lesson plan that encourages scaffolded learning</p>

<p>Hertel, R. (2008, November/December). Multigenerational workforces: from conflict to collaboration. <i>Academy of Medical-Surgical Nurses, 17(6), 11-15.</i></p>	<p>Theoretical <u>Central thesis:</u> Understanding the generational differences and the factors that shaped the individual's world paradigm will improve conflict resolution and attitudes toward learning</p>	<p>Describes preferred methods and environments for learning for each generation</p>	<p>Describes characteristics of the four generations of nurses that may be working on a unit Article written more from a management perspective Describes three distinct areas of conflict between generations including work ethic, work-family balance and learning style preferences</p>	<p><u>Key points:</u> Cautions managers to avoid stereotyping and be respectful with all generations Recognize that each generation brings skills to the table Involve staff nurses in defining the ideal unit and working environment</p>
<p>Johnson, S. A., & Romanello, M. L. (2005, September/October). Generational diversity: teaching and learning approaches. <i>Nurse Educator, 30(5), 212-216.</i></p>	<p>Theoretical <u>Central thesis:</u> Awareness of generational differences as a diversity between faculty and students will</p>	<p>Includes a table of learning style preferences per generation</p>	<p>Describes characteristics of different generations Somewhat specific to nursing students but includes education of registered nurses returning for further instruction</p>	<p><u>Key points:</u> Admits that more literature related to management of multiple generations is required Suggests that students learn more when the teaching method is congruent with the learning style of the student Use the various generations to enhance learning</p>

	<p>facilitate learning and decrease bias</p>			<p>Include a variety of teaching methods</p> <p>Suggest faculty be familiar with different learning styles</p> <p>“Balance the generational learning styles of all students with good pedagogy” p216</p> <p>Introduce educational content in diverse ways to be inclusive of all generations. Make use of the diversity in generations to provide varied perspectives to a work issue.</p>
<p>Lohri-Posey, B. (2003, March/April). Determining learning style preferences of students. <i>Nurse Educator</i>, 28(2), 54.</p>	<p>Quantitative Research – Descriptive</p> <p><u>Research Question:</u></p> <p>What are the learning style preferences of both group and individual students in both baccalaureate and RN-BSN programs?</p>	<p>Suggest using Curry’s onion model of learning</p> <p>May be related to nursing students but not specific (review of learning style instruments specific to nursing students)</p> <p>Suggest focus on both group and individual learning style preferences</p>	<p>Does not discuss generational differences</p> <p>Related to the study of baccalaureate nursing students</p>	<p><u>Key findings:</u></p> <p>Suggest that the educator review their own learning style</p> <p>Teaching style should be compatible with student learning style to ensure retention and motivation to learn</p> <p>“majority of students (65%) were active learners who preferred sensory perceptions (84%)” p54</p>

<p>Paterson, T. (2010, January-March). Generational considerations in providing critical care education. <i>Critical Care Nursing Quarterly</i>, 33(1), 67-74.</p>	<p>Theoretical <u>Central thesis:</u> Recruitment and retention of nurses is improved by awareness of generational differences in education and communication</p>	<p>Highlights learning characteristics that are specific to each generation</p>	<p>Discusses generational differences and characteristics specific to each generation Suggests that there are three generations of educators but there is no description</p>	<p><u>Key points:</u> Suggests that respect is the key for clear communication to multiple generations The author states that “one style or methodology often does not fit all” p68 Ensure the group is aware of the generational differences among them In learning activities be flexible and inclusive of a variety of ages and cultures Provide support for online learning environments as all ages will have some challenges</p>
<p>Robinson, J., Scollan-Koliopoulos, M., Kamienski, M., & Burke, K. (2012, July/August). Generational differences and learning style preferences in nurses from a large metropolitan medical center. <i>Journal for Nurses in Staff Development</i>, 28(4), 166-172. http://dx.doi.org/10.1097/</p>	<p>Quantitative Research – Cross Sectional Survey <u>Research Question:</u> Is there a difference in the learning styles of staff nurses based on their age or generational</p>	<p>Study based on Kolb’s learning style theory as it relates to generational group Learning styles are influenced by:</p> <ul style="list-style-type: none"> • Education level • Length of time since last formal education <p>Professional</p>	<p>Describes characteristics of different generations (based on Howe and Strauss)</p>	<p><u>Key findings:</u> While generational learning styles was a factor, differences in staff nurses is based on a combination of factors including years of nursing experiences, current school enrollment, type of degree earned, and the years away from formal education. (preferred learning style was diverger; although assimilator preferred more by younger generation. Abstractness increases as we age) Suggest the educator review generational mix prior to education especially when resources dictate one method of education</p>

<p>NND.0b013e31825fae5</p>	<p>group?</p>	<p>experience</p>		<p>Use abstract styles of teaching when the students are younger and concrete information when the students are older</p> <p>Effective learning is improved when the learner has some of all four learning style preferences</p>
<p>Sherman, R. O. (2008, September). One size doesn't fit all: motivating a multigenerational staff. <i>Nursing Management</i>, 39(9), 8-10.</p>	<p>Theoretical</p> <p><u>Central thesis:</u></p> <p>Managers should recognize the differences in motivators between generations to improve staff engagement</p>		<p>Different generations have different motivators</p> <p>Describes the characteristics of different generations</p>	<p>Related more to management</p> <p><u>Key points:</u></p> <p>Recommends improving the growth and performance of multigenerational staff</p> <p>Understanding the factors that motivate each generation allows the manager to improve team performance</p>
<p>Smith, A. (2010, January-February). Learning styles of registered nurses enrolled in an online nursing program. <i>Journal of Professional Nursing</i>, 26(1), 49-53. http://dx.doi.org/10.1016/</p>	<p>Quantitative Research – Descriptive</p> <p>Research question:</p> <p>What are the learning styles of RNs enrolled in an</p>	<p>Suggests learning styles were a popular topic in the 1980s and 1990s</p> <p>There is NO research related to learning styles of RNs enrolled in online nursing programs</p>	<p>Suggest there are three generations of RNs to consider</p>	<p>Key findings:</p> <p>“The predominant learning style among the 217 RNs enrolled in online nursing courses was accommodator.” p51</p> <p><i>Research by Joyce-Nagata showed that the predominant learning style for ALL ages was assimilator</i></p> <p>Learning styles that were cross tabulated with</p>

j.profnurs.2009.04.006	online Masters or BSN program?	<p>(RN to BSN or Masters)</p> <p>Refer to Kolb’s learning style inventory (most commonly used in nursing students and RNs returning to school)</p> <p>A barrier in assessing learning styles is the variance in learning inventories</p>	<p>experience showed a difference – younger nurses preferred assimilator and older nurses preferred accommodator</p> <p>Discusses the benefits and disadvantages of online learning</p> <p>Suggest including learning strategies to benefit all learning styles – suggest examples of teaching activities</p> <p>Suggest research into predominant learning style of different generations</p>
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Summary of Observations

- Very few articles that discuss both generation/age and learning style for registered nurses; even fewer that include qualitative or quantitative data
- All articles summarize by recommending a variety of teaching methods
- Inconsistencies in the research related to preferred learning styles
 - Research based on a specific research population – these are selective, one site and non-random
- David Kolb’s learning styles and inventory referenced most frequently

Guiding Questions

“Do or should acute care educators consider the learning style preferences of multigenerational staff nurses when they provide group education?”

- Generational learning style preferences
 - References to Kolb
 - Is the research consistent?
 - Other factors that influence learning styles
 - Generational motivators for learning
- Teaching methods
 - Recommended to include a variety of several styles and materials
 - Experiential learning important across all ages
 - Monitor the age group in each specific class
 - Teaching congruent with learning style of the group

Conclusion

- 1) The lack of data related to clinical educator’s awareness of learning style preferences for multigenerational staff nurses infers there is a lack of awareness or at least a lack of publications related to this topic.
- 2) There is not enough data to support or negate any claims that learning style preference is important in the education of multigenerational staff nurses.