

The Teaching–Learning Experience from a Generational Perspective

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Each generation sees farther than the generation that preceded it because it stands on the shoulders of that generation. You're going to have opportunities beyond anything that we've ever known.

— Ronald Reagan, 1981

Much has been written in pedagogical and business literature about the learning differences among generations. Each generation is shaped in part by the cultural, technological, and political events that have transpired during the members' formative years. Therefore, each generation carries its own unique imprint from specific generational influences. Most of the college classrooms today are filled by generation X and Y (Xers and Yers) students, with the minority group being baby boomers. However, boomers have heavy influence on both of the younger generations as their parents and teachers.

Projection data for 2010–2020 from the U.S. Bureau of Labor Statistics (BLS) indicate that job growth is expected in all areas of healthcare occupations, and health care will generate more than 5.7 million new wage and salaried positions. There are currently 2,737,000 registered nurses in the United States. By 2020, the need is estimated to grow to 3,449,300 (BLS, 2012). Universities, colleges, and training centers that prepare people for health occupations may find several challenges in recruiting, admitting, and retaining a workforce prepared to meet the demand. Tension may arise between learners and educators of differing generations who may have conflicting expectations of each other.

■ Generational Perspectives of Faculty and Students

Several generations are bound together for the transference of essential knowledge, skills, and attitudes for the health professions. Faculty typically consist of three generations: the veterans/traditionalist/silent generation

(veterans), who were born in the years between 1922 and 1945; the baby boom generation (boomers), who were born between 1946 and 1964; and generation X (Xers), who were born between 1965 and 1981. There is some overlap of years for each generation, depending on the source. Many healthcare programs, especially nursing, attract a wide group of students, including the traditional student who enters college after high school graduation, the slightly older student who has worked after high school or perhaps has a young family, and the seasoned individual who decides to pursue a healthcare career after raising a family or deciding to change professions. To help meet predicted needs for healthcare professions, recruitment efforts will remain focused on appealing to a younger demographic, fostering the idea throughout secondary educational settings that health care is an attractive career choice (Cohen et al., 2006). The majority of nursing students are either in generation Y, born between 1982 and 2001, or generation X. A minority of students today are boomers.

The Veterans

Cultural Setting

Most veterans experienced the effects of the Great Depression, where an estimated 25% to 30% of the U.S. population experienced unemployment or displacement. This ended when World War II broke out in 1941. Social programs such as Medicaid and Medicare were decades away. Credit cards had not arrived. Veterans are known for patriotism, loyalty, and duty. Many families were just beginning to be able to afford a family car, but the interstate highway system that linked remote areas of the nation had not been built. People listened to swing and the big band sounds of Tommy Dorsey and Glenn Miller on 78 rpm records. The whole family sat near the radio and listened to President Franklin Roosevelt’s “fireside chats” or was spellbound by the *Shadow* series and other radio shows. Reel-to-reel tape recorders and televisions were new and extremely expensive. Any adult could correct a youngster, and such behavior was not considered extraordinary by a parent. The virtues of frugality, thriftiness, and self-restraint were necessary for survival.

Rapid advances in health care came about during and after World War II. However, polio and tuberculosis killed or crippled thousands of people during this era. Many died from infection or sepsis from simple traumas. The widespread availability of penicillin during the 1940s reduced infection death rates (Smith & Bradshaw, 2008).

Despite the United States being the “melting pot” of the world, cultural diversity was not the norm or routine part of life for veterans, especially in smaller cities, towns, or isolated rural communities. Most Americans lived in homogenous neighborhoods that were segregated by cultural practice, religious belief, race, or ethnicity. Family farms were still a way of life, and veterans were often isolated from outside influences. Life for the veterans was simpler, but they grew up in a formal and ordered society where manners and decorum were prized. They were taught not to question those in authority. Information from the outside world came from movie newsreels, *Life* magazine, newspapers, and postal delivery of handwritten letters. The digital age

has made the world a smaller place, yet the veterans are not as accepting of cultural differences as are the younger generations.

Characteristics/Work Ethics/Learning Styles

Veterans are known to be disciplined, hardworking, patriotic, and loyal. Veterans are known to be team players. There is an almost universal belief within this generation in the motto, “All for one and one for all”—that is, the group good supersedes individual desires. Veterans believe that history has important lessons to be followed and used as bridges to the future. They have reached retirement age, but many work due to changes in retirement goals. Workplace stability and longevity in the work environment are prized by this cohort. Being raised in an environment that valued deference to established rules, veterans will usually follow the status quo. Veterans appreciate the wisdom of experienced leaders and elders, and they appreciate the mentor/mentee aspects of personal and professional relationships. Finally, veterans prefer a hierarchical structure in the workplace where lines of authority and responsibility are well defined. Veterans spent most of their lives without the convenience (or headaches) associated with personal computers, laptops, personal digital assistants (PDAs), instant messaging, e-mail, and Facebook. In fact, they often view technology suspiciously or as an intrusion. They put a higher value on face-to-face interaction, well-written notes, and telephone conversations (Outten, 2012).

The educational system in place during a veteran’s upbringing placed a heavy emphasis on reading, writing, and arithmetic. Most learning acquisition occurred with an emphasis on process. Knowledge was obtained through sequential, step-by-step instruction and through memorization drills. Because of this, veterans may have a higher comfort level when these strategies are used in teaching. There are few veteran faculty, but their influences persist in traditional healthcare curricula, policies, and teaching strategies.

The Baby Boomers

Cultural Setting

Boomers are generally classified as being born between the years of 1946 and 1964. During this time, the middle class was growing along with the economy. Growth meant more resources to purchase goods. Automobiles, time-saving appliances, electronics, and store-bought clothing became the norm. The baby boomer generation learned that credit cards could provide more purchasing power and adopted a “buy now, pay later” mindset with respect to homes, cars, and big-ticket items (Johnson & Romanello, 2005). Advances in medicine and health care meant that people lived longer. Health insurance was an anticipated benefit when one worked for a company or corporation.

Boomers were born prior to digital technology. Because veterans and boomers needed to learn these digital technologies, often as a result of employer mandates, they are sometimes called *digital immigrants* (Prensky, 2001). Boomers needed to adapt and catch up to the rapid changes brought about by the introduction of the public Internet in the early 1990s and the ubiquitous presence of personal computing,

e-mail, distance learning, cellular telephones, and rapid information access through powerful search engines. Boomers learned that some of their previously prized skills of penmanship and spelling were antiquated. Predigital education placed an emphasis on punctuation, writing, spelling, drills, rules, and memorization. Learners were taught in a highly structured, teacher-centered educational system that called for obedience to the rules. Computers were behemoths and, because of their large size, needed entire rooms to house them. The average person could neither afford nor use a personal computer. Simple arithmetic could not be done on calculators. Manual typewriters created important documents; correction fluid was considered a major time saver for correcting typed mistakes. Early television was not created as an educational tool but as entertainment that viewers watched on small, 9-inch screens in black and white with metal antennae. In the educational setting, challenging a teacher or parent was not usual or tolerated. Corporal punishment was not considered child abuse and was often used for a disobedient child.

Boomers used telephones to communicate when face-to-face encounters were not possible. Like learning a new language, they had to adjust to new technologies, such as e-mail and computer networks, as a necessity of work life and not a choice (Sherman, 2006). The boomers are not like the younger generations, who are fascinated with new technology and often view these inventions as time savers and vital connections to significant others (Oblinger, 2003). For the boomer, Friday nights meant attending a chaperoned dance at school. London's Twiggy was the epitome of fashion. Boomers relied on eight-track tapes or AM/FM radios for music. Now digital MP3 players provide a wide variety of music in an instant to almost every Xer and Yer. Boomers were enthralled with a variety of musical styles, the most influential being rock. The energetic sounds from a multitude of rock and roll bands emerged. The Woodstock music festival was a celebration of youth and freedom but with a downside of a culture laced with the idealization of illicit drugs, anger sparked by the Vietnam War, and the promotion of casual sex.

Other events of the day also influenced the boomer generation. Following World War II, the tension between Russia and the United States escalated the threat of nuclear war. Other major events that shaped the attitudes of the boomers were the draft, the Vietnam War, the Kent State massacre, the civil rights movement, the assassinations of Martin Luther King, Jr. and President John F. Kennedy, the feminist movement, and President Richard Nixon's Watergate scandal. Protests occurred in the street and on college campuses across the nation. Boomers are seen as idealists who want to right the wrongs of an unjust world (Gardner, Deloney, & Grando, 2007). The overall discontent of the era created an upheaval in the mores of society. Unlike their parents, many boomers came to mistrust authority figures and loudly questioned the wisdom of the institutions of organized religion, government, military, and marriage.

Characteristics/Work Ethics/Learning Styles

It is interesting that, as working adults, the boomers became known as the generation that put in long and hard hours—often at the expense of their families. Often referred to as the “me” generation, boomers sought individual accomplishment over

the group good (Benedict, 2008). They often equate work with self-worth. In general, boomers crave positive acknowledgment for work performed and thrive on praise for their efforts. Boomers prefer a more casual style of dress than their predecessors and have an uneasy relationship with authority. The healthcare profession continues to have optimistic growth potential, and many baby boomers dispossessed from another industry, job, or profession may find changing to health care both an attractive and challenging alternative. Boomers are known to be committed, lifelong learners who tend to solve problems by action.

Generation X

Cultural Setting

There are differences among authors as to the exact years that define Xers. Some authors use the years between 1960 and 1977, while other ranges exist in the literature, such as 1965 to 1976 (Jones & Fox, 2009). The most agreed-upon years are in the range of 1965 to 1981. Regardless of the difference in defining age ranges, Xers comprise a much smaller group than the boomers who preceded them and the Yers who came after them. Culturally, this group was shaped by the important events of the time, including *Roe v. Wade* (1973), the U.S. Supreme Court decision that legalized abortion.

Xers were mostly raised by boomer parents. Demographic shifts meant that many generation X children were not raised near extended family or even by both parents. Many children were raised by single parents or parents who both worked. Xers grew up with the experiment of the Children's Workshop Network, known as *Sesame Street*. Some of these children participated in after-school programs manned by unrelated adults. The term *latchkey kid* was coined for the Xer child who was left alone after school hours while a parent or both parents remained at work. Left at home, often without adult supervision, they entertained themselves with television shows, computer games, and videos.

Xer children were exposed to a higher level of violence in movies, music, and in video games. During this time, various musical styles emerged. Music Television (MTV) first aired in 1981. Musical influences such as grunge, heavy metal, and rap entered the mainstream American culture during the typical Xer's formative years. These musical styles and videos contained graphic violence and obscene material that required close monitoring from busy parents. Xers grew up amidst both unprecedented economic prosperity and severe downturns in the economy. Middle-class children were exposed to more marketing commercialism for brand-name clothes, toiletries, and shoes than any other generation before them. Drugs such as ecstasy, heroin, and cocaine became prolific across the country. Major cities had increasing violence owing to gang warfare and violent initiation rites. Nationally, unwed teen pregnancy and divorce rates trended upward while marriage rates dropped (Boonstra, 2002; Stockmayer, 2004). The problems of acquired immune deficiency syndrome (AIDS) and homelessness were part of public discussions. Influential events included the Los Angeles riots of 1991, the *Challenger* space shuttle

explosion, and the environmental disaster caused by the wreck of the *Exxon Valdez*. Overseas, the Tian'anmen Square protests of 1989, the unraveling of apartheid in South Africa, the Chernobyl nuclear accident, and the fall of communism helped shape this generation. Communication was instantaneous and brought to life in living color within moments after occurring. The Internet was introduced during this time. Xers became acclimated to learning on personal computers at school and during after-school hours.

Characteristics/Work Ethics/Learning Styles

Many conflicting characteristics are attributed to Xers. Generally they feel comfortable working alone and are considered independent. Due to their upbringing and isolation, it has been said that Xers have learned that they can only rely on themselves. They readily identify friends as extended family. As a learning group, Xers receive instant gratification related to technological advances and from obtaining information at the click of a button. They tend to see themselves as consumers of education, and tend to mistrust authority figures, which may include faculty. Xers become bored in meetings where there is much discussion prior to making decisions (Outten, 2012).

Leisure and time off to enjoy other interests are particularly critical to Xers. Unlike their parents who worked long hours, only to lose out on what their children consider to be the fun of living, Xers jealously guard their free time and view requests to work overtime as intrusions. Because of the higher value they place on personal time over the needs of their employers, they have been viewed as undependable. They highly value their individuality, but, as a group, widely adopted bizarre hair styles, tattoos, and body piercings as a sign of independence from the norm. This generation witnessed companies increasingly grow in international markets, thereby supplanting the local American worker for cheaper labor overseas. They realized that the years of loyalty their grandparents and parents gave in return for job security and a guaranteed pension no longer existed and, as a result, view government programs with skepticism and do not believe that social programs like Social Security will be available for them when they retire. Xers are described as cynical, ironic, clever, pragmatic, and resourceful (Johnson & Romanello, 2005). If there is a collective mantra that sums up the attitude of work versus leisure among Xers, it is “Work to live, not live to work.”

Generation Y

Cultural Setting

Depending on the writer, there are many names and descriptions for generation Y. They are referred to as *nexters*, *generation N*, *millennials*, and *digital natives*. Collectively, Yers are usually placed as being born between 1981 and 2001. Despite variations in date, what is certain is that most Yers have never known a time before the age of digital technology. Culturally, Yers have been shaped by such events as the 1995 Oklahoma City bombing, the 1996 Summer Olympics bombing, the mass shootings at Columbine High School in 1999, and the terrorist attacks of September 11, 2001.

The War on Terror, with efforts in Iraq and Afghanistan, continues to affect the paradigm of this generation. Generation Yers show a taste for diverse music by rap, alternative, and socially conscious groups such as Coldplay, Yellow Card, and Green Day. Music and videos from Yers' favorite groups can be accessed digitally in an instant while the audience is simultaneously performing other tasks (Taylor & Keeter, 2010).

The U.S. birth rate continued to decline in this era. Most children born in this generation were planned and wanted. As a benefit of caring and involved parents, most millennials are secure and value family relationships. Parents who become too involved in every aspect of their child's life are known as *helicopter parents* because of their hovering tendencies—they are ready to swoop down to supply any need or rescue their progeny from any threat (Pricer, 2008).

Characteristics/Work Ethics/Learning Styles

Yers are thought to be more sociable than Xers. While veterans and boomers are referred to as digital immigrants because they were not exposed to the digital world until adulthood, Xers and Yers are comfortable with new technologies and are considered as digital natives (Prensky, 2001). MP3 players, blogs, personal computers, Internet searches with Google or Yahoo, cell phones, instant messaging, text messaging, interactive gaming, video cameras, game technology such as Wii and PlayStation, wikis, Twitter, Flickr, YouTube, and Facebook/MySpace seem foreign to the digital immigrants. Digital natives, in contrast, were constantly exposed to the benefits of computer and digital technology and cannot remember a time before them. Many attributes have been assigned to Yers, including a high comfort level with computers and an insistence on being connected to family and friends technologically. There is no doubt that our world is becoming increasingly interconnected with wireless technology. Because Yers have never known a life without the presence of computers, cable, satellite radio, wireless connections, or cell phones, they are comfortable surfing the web, use digital music sources to download songs to MP3 players, and are usually experts in uploading or downloading videos through YouTube or other sources. Tweeting, texting, and using Facebook are activities that are as essential as breathing to the majority of the Yers (Hahn, 2011).

Parents of Yers have been known to involve their children in a multitude of activities—sports, music, private tutoring, and group activities. Therefore, Yers often have multiple and diverse talents. Generation Yers generally are considered more optimistic than Xers. They have lived structured, scheduled lives and generally are much closer to their parents and feel more comfortable in a structured environment than their earlier X counterparts. They are known to be enthusiastic learners but want to know that “what they are learning is connected to the bigger picture” (Sontag, 2009). Most millennials were encouraged early in life to express and voice their opinions (Piper, 2012). They are known to be deeply committed to causes of justice, environmentalism, and volunteerism for the greater good. Of all the generations before them, they are the most ethnically and racially diverse generation and not only readily accept those who are different, but also celebrate and prize diversity. They consider themselves to be global citizens (Johnson & Romanello, 2005).

The youngest generations have usually been exposed to a great deal of computer and digital technology in their formative years. Yers are comfortable in group settings yet feel isolated when unable to have instant access to friends through communication devices. They are more likely to treat technological innovations as integral to their lives, much like an appendage (Taylor & Keeter, 2010). It has been suggested that millennials may not have the verbal communication skills of their predecessors because they favor the use of digital communication media (Prensky, 2001).

There are similarities and differences among each of the generations. Although each generation is made up of individuals with unique characteristics, it is helpful to list some common characteristics that have been attributed to each generational cohort as outlined here. **Table 3-1** summarizes characteristics associated with each generation.

Table 3-1 Generational Characteristics

Veterans, 1922–1945	Boomers, 1946–1964	Xers, 1964–1981	Yers, 1982–2001
<i>Attributes/Characteristics/Interpersonal Relationships/Communication Style</i>			
<ul style="list-style-type: none"> • Unselfish; group oriented; loyal; patriotic; will delay gratification; responsible; accept line authority • Prizes the group welfare over individual needs; honors tradition; formal and proper • Prefers personal or written communication; not as comfortable with electronic style; prefers to communicate along established lines of authority 	<ul style="list-style-type: none"> • Self-seeking behaviors; “me” generation • Inconsistent love-hate relationship with authority • Ambitious; challenge status quo; informal; casual; like fewer rules; idealistic • Early wave accused of sacrificing family for work obligations • Prefer face-to-face communication; adapt to technology as a necessity 	<ul style="list-style-type: none"> • Confident; direct; assertive; fearless; adaptable; diverse; impatient; fun; informal; independent; pragmatic; outcome oriented • Challenge authority • Body piercings and tattoos are popular forms of expression; pessimistic tendencies • See friends as extensions of family • Hesitant to commit to marriage and long-term relationships • Prefer technology-enabled communication over face-to-face 	<ul style="list-style-type: none"> • Instant access to desires; technology integrated into life • Assertive; ethnically diverse; optimistic; self-confident in most areas; embrace diversity; civic minded; consumer oriented; self-reliant; enthusiastic; easily bored; idealistic; patriotic; desire respect; optimistic; friendly; cooperative; open-minded; talented; less mature; interested in others; collegial • More respectful of rules and authority than Xers and boomers • Closer to parents than predecessors • Enjoy face-to-face communication; crave social connections via technology • Informal but schedule driven; being smart is cool; team players/collaborative

Table 3-1 Generational Characteristics (*continued*)

Veterans, 1922–1945	Boomers, 1946–1964	Xers, 1964–1981	Yers, 1982–2001
<i>Learning/Work Styles</i>			
<ul style="list-style-type: none"> • Dependable; follows established rules; prefers hierarchy • Educated in teacher-centered settings • Values mentorship with established leader or experienced person • Less likely to embrace newer technology than successors; more process oriented; seeks job security; very loyal to employer 	<ul style="list-style-type: none"> • Prefers text over graphics; linear thinking; process oriented; step by step • Likes contact with faculty • Lifelong learning commitment; ties learning with life experiences; values rewards for work done; enjoys titles and accolades for achievements; willing to work long hours to get job done • Seeks secure retirement; loyal to employer • Technology reluctant • Does not enjoy games or being put on the spot 	<ul style="list-style-type: none"> • Education began in student-centered settings; processes quickly; multitasks; enjoys fast pace; focused; parallel/mosaic thinking; nonlinear thinking; concrete thinking • Prefers to work alone; needs safe environment to participate; experiential; embraces technology • Little tolerance for extraneous information; dislikes assignments—does not view them as learning enhancements; discounts contact with faculty as important • Desires work and school flexibility; seeks instant results for efforts; self-directed; entrepreneurial • Values free time over work hours; little loyalty to employer; wants success and ambition on his or her own terms; may overestimate contributions to an organization; wants rapid advancement without expending long work hours 	<ul style="list-style-type: none"> • Parallel/mosaic thinking; multitasks; expresses doubts about academic abilities; processes quickly; prefers graphics over text; likes to work in groups; curious; experiential; thrives on discovery; short attention spans; high incidences of ADD/ADHD diagnoses • Enjoys interactive learning and games with immediate response; demands 24/7 access to learning/faculty; learns best by trial and error; prefers more structure than Xers • Likes creatively presented learning materials; enjoys entertainment aspect of learning; no tolerance for delays in class beginning and endings • Has expressed concerns regarding academic abilities; enjoys mentoring relationships from experienced leaders; likes stories that are relevant to content; eager to learn new requirements for work/school • Prefers audio/visuals over reading; expresses higher reading comprehension than Xers

■ Generational Considerations for Educators

Changes in behavior, and thus learning, take place more readily when the student is fully engaged and can actively participate in the learning process. Faculty should plan teaching experiences carefully to achieve successful outcomes. With generational considerations in mind, an educator might ask the following questions:

- Which factors influence each generation involved in educational settings? What are the typical characteristics for each generation?
- How do my generational preferences and characteristics merge with or differ from those of the newer generations?
- What are the best teaching strategies to engage each generation of learners? How do generational differences affect communication?
- Could generational differences simply be maturity issues? How does technology affect the new learner?
- Who are digital natives and who are digital immigrants? Do digital natives think differently than other learners?
- Which strategies can engage the new generation of learners?

Educational Expectations of Teachers

Traditional teacher-centered learning has given way to a more student-centered approach (Brown, Kirkpatrick, Mangum, & Avery, 2008). Within nursing programs, there are decades of separation from the authoritarian, quasi-military chain-of-command programs that dominated training for most of the veterans and boomers. The hospital-based apprenticeship model of nursing education has long since moved into colleges and universities, where students spend much of their time in the classroom but less time with actual patients providing care—yet nursing curricula have not changed substantially (National League for Nursing [NLN], 2003). The challenges of a 21st-century acute care environment, with shortened lengths of stays while maintaining a high degree of safe, ethical, skillful, and efficient care, are emphasized. Increasingly, there are calls to reform nursing education into a model that espouses teaching in action (Benner, Sutphen, Leonard, & Day, 2010). A comprehensive study by the Institute of Medicine (IOM) recommended that nursing curricula be reexamined, updated, and adaptive enough to change with the changing needs of society and technological advances (IOM, 2011).

A well-prepared professional must be educated and equipped to manage the complexities of the system, or he or she will become overwhelmed by role performance demands. Faculty, armed with the knowledge and experience of the profession, challenge students through high ethical standards, self-discipline, professional development, and rigorous program curricula. Students who arrive late or do not attend class, communicate poorly, or appear to be inattentive in class are viewed with a certain amount of negativity. Students who text-message, shop online, do not keep appointments, talk in class, or use a disrespectful tone of voice are seen as uncivil by most boomer or veteran faculty. To maintain a positive rapport between faculty and

students of different generations, the faculty member must clearly define behaviors that are acceptable in the classroom and clinical areas (Supplee, Lachman, Siebert, & Anselmi, 2008).

Educational Expectations of Students

Radical changes have occurred in primary, secondary, and postsecondary education for both parents and students in the past several decades. Advances in technology, the view that education is a commodity, developing maturity, tight schedules, previous life experiences, values, and cultural backgrounds have influenced learner attitudes. Education is no longer seen as a revered institution incapable of being criticized, but rather as a product—the result of a consumer-oriented culture. Whereas boomers appreciate a mentoring relationship with faculty, Xers believe they can teach themselves if given the right tools, while Yers view experienced faculty with admiration but not awe. Generation Y students, sheltered by doting parents, are said to be more grade conscious than their earlier counterparts. They are confident and not fearful of challenging faculty over a grade disagreement. They will quite readily voice dissent and demand their consumer rights. Younger students demand respect and to be listened to when their opinions are expressed. They prefer an egalitarian approach in the learning environment (Gardner et al., 2007). The newest generations want faculty who are not only experts in the field but also have recent relevant clinical practice in the subjects that are taught (Oblinger, 2003). Students in today's environment want clear connections and rationales as to why subject matter is to be learned. This coincides with adult learning theory and is not a foreign concept to experienced educators. Students today like personal attention and immediate constructive criticism for their performance. Above all, students seek a connection with faculty (Gardner et al., 2007). Younger generations seek 24/7 access to their instructors (American Association of State Colleges and Universities [AASCU], 2004). One study indicated that 64% of college students would be interested in communicating with faculty outside of the class schedule through postings created in blogs (Junco & Cole-Avent, 2008). Today, schools, colleges, and universities are striving to keep pace with these demands by putting the required technological infrastructures in place to support online access for students and faculty. Communication networks supported by colleges and universities enable communication methods to support the desire for increased learning activities or faculty support outside of the classroom.

Generation Yers anticipate support and nurturing from faculty (Gardner et al., 2007). Both the X and Y generations will adapt to a variety of teaching methods, with Xers being more comfortable with computer, online, and distance learning and self-paced modules. Experiential learning is preferred by both of these generations. Yers have a special penchant for hearing personal stories to illustrate points (e.g., analogies, humor, and wit) and seek an entertainment quality in teaching sessions. Despite their apparent addiction to new technologies, some studies indicate that nursing students actually prefer a well-designed and entertaining PowerPoint

presentation with elements of multimedia embedded into the lecture material and a complete set of notes and slides over other methods (Paschal, 2003; Walker et al., 2007). Lecture and explanations are preferred for difficult content topics rather than group work. Undergraduate baccalaureate students younger than 25 years prefer to read about the subject first, followed by an expert’s lecture, despite self-reports of reading comprehension difficulties (Walker et al., 2007). When attempting to learn a psychomotor skill, students in these cohorts favor demonstration over a lecture covering the material. Experiential learning fits easily within all three cognitive domains of nursing and is a valued methodology among all generations. Experiential learning is described as learning experiences (Kolb, 1984). Xers actually value doing over knowing, according to one author. Younger-generation learners have been reported to prefer to perform the skill first under the direction of the faculty and then independently, rather than hear a lecture on the material (Walker et al., 2007).

Barriers to the Teaching–Learning Experience

Education in a health professions program is challenging, especially for the incoming student. The sheer amount of reading and material can intimidate even the most scholarly student, yet it is clear that, to be successful in the program, one must be able to comprehend, analyze, and write well (Hawks et al., 2015). Typical Yers will have difficulty reading and studying for long periods of time (Gardner et al., 2007). Multitasking is second nature to the Yers, but sitting and reading for long periods of time is difficult. It is estimated that by the time students reach college, they will have spent 5,000 hours reading compared to 10,000 hours playing video games and 20,000 hours watching television (Prensky, 2001). There is no doubt that Yers have had more sensory input since childhood than earlier generations. Scientific evidence does show that environmental influences alter brain structures (Draganski et al., 2004; Sontag, 2009). It has also been suggested that the newer generations do learn differently from their predecessors because of the excessive amounts of visual stimulation they received throughout childhood.

Parallel/Mosaic Thinking Patterns

Mosaic thinking is a term coined by media theorist Marshall McLuhan (1978), who hypothesized that the electronic age sparked a revolutionary, or mosaic, way of processing information. Western civilization was formerly characterized by the dominance of reading and writing, which is now giving way to electronic media. Linear reasoning relies on a phonetic/alphabetical structure whose use is foundational to logical and sequential thought processes. Mosaic thinking is a consequence of visual symbols and images that are found in media today. According to McLuhan and others, this change in communication has radically altered the way information is processed and society functions. Similarly, parallel thinking is the ability to process information from a variety of sources simultaneously. These thinking/learning patterns have been ascribed especially to the newer generational cohorts who are comfortable in a fast-paced, technologically connected world.

Our newest cohorts connect with various digital technologies as they become available. Digital natives are said to gather information in parallel or a mosaic pattern. They process data quickly and have the ability to take in information simultaneously from various sources. Therefore, they do not always learn in a step-by-step sequential manner. Younger students have been exposed to endless hours of digitally enhanced games (Prensky, 2001). In gaming, trial-and-error methods meet with failure or reward. Quick motor reflexes for conquering spatial barriers and problem solving are rewarded and positively reinforced. A consequence of this is students' reduced tolerance for quiet reading, reflection, and listening. There is evidence that, because of changes in brain activity, technologically dependent students have a shorter attention span and poorer reading abilities than digital immigrants. As a result, boredom is not conducive to active learning.

Another downside to the reliance on instant feedback is the sometimes dubious accuracy of Internet sources. Easy distractibility due to the constant habit of multitasking is often observed in younger students. To engage today's learner, the experienced generations will need to understand their learners' preferred learning styles and adapt or enhance teaching strategies to help them connect with the material. The new generation prefers learning strategies that encourage exploration, discovery, and trial and error. Unfortunately, trial-and-error problem solving takes time and resources. It is not ideal in patient scenarios where the ultimate goal is to protect the patient's safety and comfort within limited time constraints.

Current nursing education may be outdated for digital natives as well as future generations of students. Curricula in health profession programs include a large demand for reading and sequencing. There is an emphasis on step-by-step processes to achieve learning outcomes. This method does not take into account new learners' propensity for a fast-paced, parallel, mosaic thinking pattern. Online access, virtual reality, simulation, and computer games could solve these needs. Because of this, many nursing leaders question whether current nursing curricula are preparing a viable workforce. The American Association of College Nurses and the NLN have published position papers calling for major changes to incorporate the technology of these younger generations (NLN, 2008). More schools are going online to adjust to the ever-increasing demand from students for increasing class schedule flexibility. It is estimated that online and distance nursing programs will continue to rise and remain a viable option for many. Despite the plethora of options for students today, recent studies indicate boomers and Yers prefer face-to-face communication over distance learning-type arrangements.

Strategies for Teaching Among the Generations

To best serve our successors, it will be necessary for faculty to understand our personal biases, learning styles, and preferred methods of teaching (Pardue & Morgan, 2008). The methods used to teach students are going through a radical upheaval because of changes in societal expectations, technological advances, and increased access to information. Adult learning theory rests on the accepted principle that learners will retain and retrieve information when meaning is associated with it. Another important

principle of adult learning theory is the idea that adults want to learn what is applicable to them at the moment (Knowles, 1973). Knowledge of the technological advances in a digital age and methods to employ them in the classroom, lab, or clinical site will become increasingly important over time. To say that it would be a necessity to engage the students would be an understatement. Foreknowledge of general attributes of the digitally engaged student is useful for nurse educators who are products of a different generation. For any generation, faculty creativity, an open and honest dialogue, and availability will help create a positive environment for students to thrive.

From a learning perspective, Xers jealously guard their time; they prefer the bullet-point version of subjects. They want to know precisely what they need to know to pass to get good grades in the shortest way possible. They enjoy the presentation of specific information through e-mail, blogs, and instant messaging (Gibson, 2009). Xers have little tolerance for inefficiency and do not want their time wasted. They prefer brief learning episodes followed by group interaction and, because of their independence, will research information easily online (Gibson, 2009). They enjoy online courses because they provide more flexibility in scheduling. Xers are determined to complete tasks but see them only as a means to an end, not as learning for the sake of learning.

Yers learn best in an environment where there are multiple choices for obtaining the information, especially when the subject matter is difficult; choices include detailed notes, recordings of lectures, PowerPoint lectures, and videotapes of lectures that can be reviewed later. Yers value the joy of discovery more than their older counterparts. They are known to enjoy hearing the experiences of teachers whom they consider mentors. This trait may be especially heartening to the educator who has a rich history and experiences to share. Yers may need to be more directed by their educators than Xers (Gardner et al., 2007). Yers appreciate being asked for their opinions and relish opportunities to be part of a discussion. They are comfortable with technology and prefer peer collaboration, individual feedback, and interaction (Revell & McCurry, 2010). They demand respect from those who are in leadership roles. The Yer is more likely to be engaged when teaching strategies involve creative solutions (Gibson, 2009). The Yer prefers immediate feedback and instructors who are available beyond the classroom schedule.

The use of classroom clickers is a method to enhance classroom participation and may appeal to all generations within the classroom. They allow anonymous responses to classroom activities and provide immediate feedback to problems (Skiba & Barton, 2006). The risk for exposure is minimal; this aspect would appeal to a boomer student who chooses an incorrect response.

Technology and the role it plays in our lives will continue to expand, which may sometimes be intimidating and frustrating for the older generations but not so for the younger generations. In the workplace, the trend toward increasing reliance on electronic and digital equipment and electronic medical records underscores the fact that technology marches forward. It will be necessary to utilize the technology already in the workplace to prepare future health professionals. The Technology Informatics Guiding Education Reform (TIGER) initiative begun in 2007 is a national plan to

move nursing practice and education into the digital age. Members and experts from nursing education, informational technology, practice areas, and government agencies are collaborating to meet a 10-year strategic plan. The TIGER vision is twofold. First, it aims to “allow informatics tools, principles, theories and practices to be used by nurses to make healthcare safer, effective, efficient, patient-centered, timely and equitable”; second, its goal is to “interweave enabling technologies transparently into nursing practice and education, making information technology the stethoscope for the 21st century” (TIGER, 2007, p. 6).

High-fidelity simulation (HFS) labs that use standardized patients and human-like computerized manikins to mimic real patient clinical situations are becoming more prevalent. This teaching methodology correlates with the preferences of the youngest generation to learn in an immersive and experiential approach that encourages important linkages between theory and practice. HFS fulfills the requirement to meet learning objectives, perform important skills, and develop clinical reasoning skills. Debriefing by faculty facilitators encourages students to analyze specific decisions and actions and reflect for future actions. Using a high-fidelity simulation lab requires dedication on the part of the program due to the added expense and time commitments (Garrett, MacPhee, & Jackson, 2010).

There are countless ways of involving and engaging students in experiential methods, with or without technological enhancements. Virtual clinical experiences and lab practice are becoming more affordable, reliable, and evidence based. They may be essential educator extensions as the shortage of qualified educators in the health professions continues. They blend well with the traditional methods to assist the learner in gaining psychomotor skills. The power of multisensory experiences embedded in curricular teaching strategies cannot be overestimated, because it increases the long-term memory retention and retrieval of the material for the learner. Increased networking with other faculty who are at distant universities, through electronic mailing lists or blogs, represents a viable way for faculty to increase their teaching method repertoires.

Computer-based video games have been part of entertainment and primary education for many years. Students are exposed to simulation experiences at increasingly younger ages. They become experts at manipulating objects in spatial environments repetitively throughout their childhoods. Applying trial-and-error methods in a safe environment allows the participant to practice necessary skills until perfection is achieved. Sources indicate that most younger students, especially digital natives, thrive on this type of learning. Older students may not embrace game playing as valuable, especially if they are not attuned to this particular modality. Fast-paced gaming may be threatening to an older student. There should be alternatives to this format if the class consists of multiple generations. Older students may need more time to practice or prefer a one-to-one, self-paced computer experience that focuses on decision making to enhance clinical reasoning skills. Simulation games have long been used for training purposes in aviation and the military. The learner plays out scenarios repetitively and receives immediate feedback for correct or incorrect responses. Virtual reality games for the purpose of skill acquisition are in the beginning stages in nursing education (Kilmon, Brown, Ghosh, & Mikitiuk, 2010).

As the technology becomes more sophisticated and realistic, it is not hard to imagine the possibilities for all areas of the healthcare professions. Learning and creative expression can also be taken into the virtual world of Second Life (Junco & Cole-Avent, 2008; Linden Research, Inc., 2009). Second Life is a virtual reality world where players interact locally or across the world. With the combination of enhanced video games, role play, simulation, and case studies comes a potential new learning methodology using this system. The educational goals might be collaborative skill development, communication, reasoning abilities, and/or practice of complex psychomotor skills. An exciting dimension to simulation learning has great potential in the healthcare professions. In 2005, Texas A&M University–Corpus Christi partnered with Breakaway Ltd., a gaming company, to launch a virtual reality simulation lab for training military and civilian emergency medical personnel in trauma care. This teaching modality immerses the learners in a high-fidelity, three-dimensional world that allows for multiple realistic patient scenarios to be played out in an emergency room setting. These experiential scenarios encourage critical thinking, psychomotor skill acquisition, and collaboration with other healthcare personnel—all in a low-risk, virtual environment (Breakaway, Ltd., 2012). Educators should anticipate that virtual simulations will be more widely used as they become increasingly available and reliable (Schmidt & Stewart, 2009). It should be noted that students are more receptive when experiential learning takes place in a low-stress environment.

There are many teaching strategies that can be employed to engage the younger generations of learners. Narrative pedagogy is a way of interpreting information from different perspectives; using a deconstruction (analytical) approach may work in classes that welcome and encourage student participation, analysis, and dialogue (Diekelmann, 2001). Concept maps use parallel/mosaic thinking to promote clinical reasoning (Burrell, 2014; Vacek, 2009). Reflection and critical thinking can be powerful and generationally relevant for promoting clinical thinking by experienced faculty. Students are guided in examining every angle through organized brainstorming techniques (Kenny, 2003). Another strategy that encourages clinical reasoning is engaging in Edward de Bono’s six hats game (de Bono, 1999; Kenny, 2003). This encourages parallel thinking processes by looking at a problem from six different perspectives and discussing each of them.

Millennial students appear hardwired for action and engagement using web-based technology and resources. Educators identify lecture-based classes as transmitting low-level information that may actually reduce the ability to think critically. It is well known that learning is greater with an actively engaged learner than with a passive, bored one. In short, according to one expert in higher education, “class time is too valuable to spend time delivering content, which is, or can be, available elsewhere” (Taylor, 2010, p. 193).

■ Conclusion

Conflicts of younger generations with their elders have been documented for millennia. It may be debated whether the root causes of this conflict are student immaturity, undeveloped reasoning abilities, preferred learning styles, or alterations in brain structure.

Faculty reluctance to change or generational unawareness may also affect communication and learning. It will become increasingly requisite for healthcare curricula to change, modify, and adapt to strategies that coincide with technological advances and the societal expectations of new generations. Whatever the causes, these changes must be reckoned with. The timeless determinant for true educational success will most likely remain the connections from teacher to learner and from learner to teacher that transcend generational differences.

Discussion Questions

1. Discuss strategies you would use to meet the learning styles and educational expectations of a multigenerational classroom.
2. From a literature search, summarize the effectiveness of cutting-edge technology when utilized with multigenerational students.
3. You are planning group activities for your class. Each group has four students. Should each group have representatives from only one generation, or should each group contain all four generations?

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