This article discusses the key characteristics of Generation Z that directly influence their attitude toward education and compiles a number of teaching and learning strategies that have been widely suggested by educators to enhance the educational experience of Generation Z students.
Generation Z is the demographic cohort after the Millennials, defining individuals who were born between the mid-1990s and 2010. The name “Generation Z” was first suggested by readers of USA Today during an online contest in 2012, other names like iGeneration, Gen Tech, Gen Wii, Digital Natives, and Post-Millennials have been widely used in the literature and by different organizations. Generation Z represents approximately 25% of the U.S. population, surpassing the Baby Boomers (born between 1946 and 1964) and Millennials (born between the early 1980s and mid-1990s) cohorts in size. Generation Z’s birth years overlapped with various technological advances, including the widespread availability of wireless Internet access and the explosion of handheld technologies (e.g., smartphones, tablets, etc.), as well as socioeconomic trends (see Figure 1). The attitudes of this generation have been greatly influenced by the aftermath of September 11, the economy crisis of 2008, rise in unemployment rate between 2006 and 2009, and public shootings.

Generation Z Characteristics and Expectations

Generation Z grew up in an Internet world, in which they learned to be comfortable with technology and social media from a young age. Even though Millennials are skilled in technology, how Generation Z has had access to information and consumed it, at an early age, is unprecedented. In 2014, it was reported that 41% of Generation Z spend more than three hours per day on their computers for non-schoolwork-related purposes. A survey by Pew Research Center showed that about three-quarters of teens own or have access to a smartphone, and only 12% of 13–17 year-olds have no cell phone of any type. The use of social media such as Facebook, Instagram, and Twitter has become an inseparable part of most Generation Z teens’ daily life, mainly to keep in contact with friends and to develop new relationships.

Today’s youth have all the world’s information at their fingertips thanks to smartphones, laptops, smart TVs, and tablets, to which they allocate a great portion of their time. It has been reported that Generation Z spend around 9 hours per day on their cell phones. As a result, Generation Z expects everything on demand, anytime, anywhere, without the need to wait. Another interesting trait of Generation Z is that they prefer things being tailored for them, from Netflix and YouTube shows to food at restaurants. This is not strange since their entire lives they have received information, services, and suggestions based on their preferences. Generation Z’s excessive reliance on the digital world and technology has led to the cohort’s common characteristics, including limited social skills, high risk of depression, and short attention spans. For instance, a survey of Canadian media consumption conducted by Microsoft showed that the average attention span had fallen to eight seconds in 2013, down from 12 in 2000.

A major percentage of Generation Z are children of Generation X who struggled with the economic recession of 2008. Consequently, being raised by skeptical parents in environments that might have been affected by financial and social stresses has led Generation Z to be, among other things, independent, cautious, pragmatic, insecure, and inclined to entrepreneurial careers. In this regard, a 2013 survey by Ameritrade revealed that 47% of Generation Z students in the United States were worried about their student debt.
and 36% thought they would not be able to afford a college degree. On the positive side, Generation Z is in general more risk-averse compared to Millennials, as might be judged by their lower alcohol and drug abuse, lower teen pregnancy rate, and higher high school graduation rates. Another key characteristic of Generation Z is their tendency to alter their identity to better blend in and cope with the environment or people they interact with (referred to as “situational identities”).

Teaching and Learning Strategies for Generation Z

Generation Z think, behave, learn, and function differently from their predecessors. Educating this generation can be made more effective if educators appreciate these differences and adopt novel teaching strategies that take into account what Generation Z students really care about and how they prefer to acquire knowledge. Considering the age range of Generation Z in 2019 (9–20 years old), its early members have recently entered higher education, while those closer to the end of the cohort will enter in the coming years. While early members would more likely resemble Millennials, later members of Generation Z would be expected to have more distinct and accentuated characteristics compared to generations before, necessitating fundamental changes in teaching methods.

In the remainder of this article, we discuss some of the strategies and suggestions that have been put forward by educators, researchers, and Generation Z students themselves to prepare higher education communities to deal with, engage, and educate Generation Z students. The recommendations elaborated below are by no means an exhaustive list. It should be noted that not all of these methods would be suitable for all students and/or circumstances; thus, they require some experimenting and testing with different groups of Generation Z.

The most influential characteristic of Generation Z when it comes to education is their craving for technology and the digital world. Most Generation Z students expect all teaching and learning resources to be available on online portals, allowing access to course materials on their electronic devices anytime, anywhere. In order to meet the educational demands of Generation Z, universities and colleges must equip their facilities with digital textbooks, digital projectors, interactive whiteboards, and associated mobile device apps. In addition, class updates and campus events can be posted on social media—Facebook, Instagram, Twitter, and LinkedIn—media that students use anyway for their personal or professional relationships.

Colleges and universities can even further shift from traditional teacher-centered lectures toward more active and blended learning strategies. Given the fact that Generation Z is highly accustomed to technology, educators can incorporate software, electronic learning materials, online animation/interactive material, and even interactive games into
Generation Z students typically expect to have everything personalized, including education. Although it is impossible for professors to tailor lectures and assignments according to each student’s preferences, for some assignments educators can provide a list of activities (e.g., oral presentation, poster presentation, case study, short paper, etc.), all with the same learning objectives, from which students can choose their favorite. Additionally, if deemed effective, students should be allowed to study/work alone and at their own pace using self-study materials, such as online tutorials and videos. It may be more convenient and appealing to Generation Z students for instructors to substitute virtual office hours for in-person office hours, or to provide both options. Students can contact the educator using online video conferencing platforms such as Google Hangouts or Zoom to discuss their problems and also receive tutoring in an electronic format such as video clips or digital gaming.

Compared to Millennials, Generation Z students are typically more pragmatic, and their view of learning is quite different. Generation Z students desire to acquire skills that are vital to their curricula. For instance, Sanmugam et al. employed a gamification platform as a mediator for Generation Z students who were learning science. Based on interviews with the participants, they found that gamification can boost students’ interest in learning. After being used for about two decades, learning management and virtual learning environment systems (e.g., Moodle and WebCT/Blackboard) currently are mainstream education tools and their use in teaching is expected by students.

Evidently, Generation Z students prefer to learn about a concept or subject through observation rather than reading about it in a traditional textbook. Therefore, it could be helpful and more engaging for educators to present at least part of the course content via videos, digital images, and visual diagrams. In this context, Murillo-Zamorano et al. showed that flipped classroom, a student-centered learning method, can positively affect students’ knowledge, skills, and engagement. In another study, Freeman et al. analyzed 225 reports on performance of undergraduate students in science, technology, engineering, and mathematics (STEM) courses in order to compare traditional lecturing and active learning. The results indicated that examination scores increased by 6% when active learning sections were applied, and that students in classes with active learning were much less likely to fail.

Moreover, rather than banning smartphones in class, professors can embrace them and use them to communicate with students via student response systems (e.g., Poll Everywhere, Mentimeter, AnswerGarden, TurningPoint), gathering instant feedback. Considering Generation Z’s need for immediacy of information and their short attention spans, the learning process needs to be more self-directed and project-based to effectively engage students. For individuals with a lack of focus, information should be conveyed in small quantities using different modalities such as lecture, discussion, and videos.

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their future jobs, and they prefer to apply their educational experience to solve real-life problems. To answer Generation Z’s aspiration in this regard, faculty can assist students to take several internships during their years in college by offering on- and off-campus internship opportunities that accord with their experience. Generation Z students prefer intrapersonal learning since they can better focus, study at their own pace, and also learn the subject well before having to discuss it with others. To incorporate this preference into group experiences, educators might consider several individual “checkpoints” throughout a project, allowing students to think through a problem/concept by themselves before asking them to contribute to group “checkpoints.”

**Conclusion**

Generation Z students can be characterized by a number of unique traits: accustomed to technology and digital world, pragmatic, individualistic, independent, cautious, having a short attention span, and a strong desire for immediacy and convenience. These traits and attitudes greatly affect how they prefer to learn and to what educational approaches they respond well. Universities that understand the educational demands of Generation Z and design their curricula delivery accordingly will be successful. Educators who reconsider their teaching strategies and integrate technologies that are widely used by Generation Z students will be more successful at engaging and motivating them. Educators can maximize the use of visually based content instead of solely emphasizing textbook reading and traditional presentations. Finally, higher education courses that boost project-based, practical, student-centered, and experiential course components will provide students more freedom in learning, encouraging innovation, and critical thinking.