

# Exploring Challenges and Opportunities: Setting the Context for Change

In this chapter, we describe the confluence of three major factors that have led American higher education to where we are today and that impact our future. These factors are

**Growing Public Concern around:**

- Return on Investment
- Persistence and Graduation Rates
- Lack of Access
- College Readiness
- Perceived Skills Gap
- Misalignment with Workforce Needs and Public Interest
- Political and Social Context
- Fierce Competition and Confusion in the Marketplace

**Radically Changing Employment Landscape, including:**

- Accelerating Pace of Change
- Automation
- Globalization
- Changing Nature of Organizations
- The Rise of the Gig Economy
- Increasingly Diverse Workplaces
- Employer View of the Future

## **Expanding Learner Base and Changing Learner Needs that involve:**

- Traditional Learners
- Post-traditional Learners

## **INTRODUCTION**

We begin this book by establishing the need for change in higher education, because without a clear understanding of the problem (and the desired end goal/state), it is hard to strategize about pathways to get us there. We are attempting to present a coherent and logical argument based on data, and we believe our colleagues in various roles and different types of colleges and universities will be ready to engage in thinking through how their respective institutions should respond.

It is no secret that the world around us is changing rapidly. No matter your age, socioeconomic status, race, ethnic background, or educational attainment, every day brings something new—for example, an “invention” (app, product, service, etc.), political strife, medical breakthroughs, natural disasters, regional conflicts, economic shifts, and scientific discoveries. All of these changes provide context to the work we do in higher education. While we do not believe that “the sky is falling,” given the vast changes in the world—demographically, economically, socially, and politically—we believe that higher education *does* need to (a) evolve in some areas (e.g., think beyond degrees, semesters, and credit hours), (b) shift our focus to be more inclusive (e.g., expand our potential learner base), (c) transform how we deliver, measure, and credential learning (e.g., adopt competency-based education, focus transcripts on knowledge and skills instead of courses, consider the role of adaptive learning platforms), and (d) leave behind some vestiges of ages past (e.g., lectures). We must find new ways

to be as flexible, agile, and adaptable as the graduates we send out into the world will need to be.

If we are to remain relevant and add value to our learners' lives, it is essential that we more fully understand the forces and shifts in the world around us—globally, nationally, locally, and institutionally—because that world will both impact and be impacted by our evolution and transformation. It is also important to be able to see that world not only from our own perspective, but also from the perspective of those we “serve”—for example, parents, learners, employers, legislators, and K-12 educators. And we should remember that the public often does not distinguish among institutions the way we do (such as public/private, nonprofit/for profit, residential/commuter, two-year/four-year, technical/liberal arts, urban/suburban), but rather views postsecondary education as one monolithic entity. This means that even if some of the criticisms levied on higher education do not ring true for your institution, department, or courses, we are all tainted and impacted by them.

This chapter identifies and briefly discusses some of the major concerns about, critiques of, and changing forces that affect our industry, as well as the conditions in the world around us that set the stage for thinking about new paradigms that are needed to maintain relevance in the future. After all, “as academics, we have a moral and professional responsibility to help shape the public narrative about learning and education in the United States” (Sullivan, P., 2017, pp. 68–71). If we do not, others will! In fact, some have already asserted that we are close to losing control of our own narrative—to legislators, the media, employers—and must begin to define a compelling and positive future rather than assume the role of victim by allowing others to create it for us (Seymour, 2016). It is in this spirit that we approach our work, and we are hopeful that we will further stimulate the conversation and challenge the status quo with engaging new pathways of possibilities that

will transform our educational ecosystems and learning potential commensurate with our emerging new world context.

## **GROWING PUBLIC CONCERN**

Long-held beliefs have supported the notion that higher education provides critical social and economic mobility and a ticket to achieving the American Dream. Consequently, some might argue that access to quality postsecondary education is a critical element to ensuring the vitality and sustainability of our society. Although postsecondary education is not solely a “public good” in the economic sense of the term (i.e., a good that cannot be restricted to only those who pay for it, and consumption by one does not prevent consumption by others), one could certainly make the case that it is a “good” that serves the public interest. Postsecondary education and related research in the United States is a story of continual expansion and integration with our society’s needs to develop the talent, skills, technology, and capacity to serve a growing nation. As such, higher education has also been the beneficiary of considerable funding from the public sector, either directly in state- and locally supported institutions or indirectly through federal and state financial aid programs supporting students. In light of the intersection of the perceived need to have access to quality education in order to achieve success and the growing costs to operate these institutions, the public’s scrutiny of the academy has reached a new level. The scrutiny has led to growing skepticism in many corners and has fueled public concern on a range of issues.

**Return on Investment (ROI).** Although we believe that ROI is more than simply attaining a good job, we recognize that job attainment is one publicly embraced measure of postsecondary education’s ROI. That said, much of the narrative on higher

education focuses on the value higher education provides to individuals given the cost and debt load graduates carry, which impacts their lives in a variety of ways. For example, “a college education is now the second-largest expense an individual is likely to make in a lifetime—right after purchasing a home” (Dickler, 2016, para. 1). However, that characterization understates the negative impact of student debt for many recent graduates because student loan borrowers are not buying homes as they used to given they are not able to save for a down payment (Bauman, 2018; Lew, 2015). According to the National Association of Realtors and American Student Assistance, “student loan debt is delaying homeownership for millennials by an estimated seven years” (Lerner, 2017, para 2). In fact, homeownership for people younger than 35 has declined from 41 percent in 1982 to 35 percent in 2017 (Kitroeff, 2018). The student debt situation is becoming so mainstream that employers and states are looking at new ways to creatively leverage the student debt situation to attract and retain employees. The state of Maine, for example, which has about a third of their workforce either retired or rapidly approaching retirement, recently announced a student loan forgiveness program designed to attract recent graduates to live and work in the state (Sreenivasan, 2018). Some companies have also started to integrate student debt assistance into their employee recruitment and benefits offerings and strategy. In 2015, Fidelity Investments was among the first companies to launch such an effort by paying \$10,000 over a five-year period toward student debt for full-time employees. Aetna followed suit in 2017 and also expanded similar benefits for part-time employees. Additionally, Fidelity has been contracted by Hewlett Packard, along with at least 25 other companies, to help them develop similar programs for their employees (Pandey, 2018).

For some college graduates, the situation is even worse; according to U.S. census data reported by the Pew Research

Center, “today’s young adults are significantly more likely to be at home for an extended stay compared with previous generations of young adults who lived with their parents” (Fry, 2017, para 1). They put the number of 25-to-35-year-old millennials living at home, as of 2016, at 15 percent, compared to Gen Xers at 10 percent when they were the same age, 8 percent of early baby boomers, and 8 percent of the Silent Generation (Fry, 2017). So, the trend is upward. The median length of time at their parents’ home is currently 3 years, which is an increase of 6 months from data collected for 2005–2013 (Fry, 2017). So again, the trend is upward. The term “boomerang generation” may not fit the majority of college graduates currently, but if we continue on this trajectory, it very well could.

Of course, it is not college tuition and subsequent debt alone that accounts for millennials returning home after graduation, but clearly it is one of at least three factors, along with job market realities and housing prices, according to Bleemer, Brown, Lee, and van der Klaauw (2017). These researchers, using data from a variety of sources, conclude that, between 2004 and 2015, there was an 11.4 percent increase in 25-year-olds living with parents and a 12.8 percent decrease in those living with roommates (Bleemer et al., 2017).

What exactly are the numbers we are talking about when we invoke the phrase “debt load”? The Bill & Melinda Gates Foundation reports that 7 in 10 seniors from public and nonprofit colleges have student loans with an average debt of \$30,100 (Bill and Melinda Gates Foundation, n.d.), which equates to an average monthly student loan payment for borrowers aged 20–30 of \$351 (Student Loan Hero, 2017). According to a 2018 Department of Education report, for those who graduated in 2007–2008, their loan payments accounted for about 12 percent of their monthly salary in 2012 (Cataldi, Woo, & Staklis, 2017). What makes this situation worse is that one-third of student borrowers never even complete college (Bauman, 2018).

According to the Federal Reserve Bank of New York, student loan debt had reached \$1.53 trillion by the second quarter of 2018 (Singletary, 2018), making it the second largest category of consumer debt after home mortgages. This represents approximately 10.5 percent of U.S. consumer debt. In fact, “Americans spend about \$30,000 per student a year—nearly twice as much as the average developed country” (Ripley, 2018, para. 4). Further, the delinquency in payment rates of college-related loans exceeded 10 percent during the fourth quarter of 2017 (Sankar, 2018).

For those who go on to earn an advanced degree, the situation is even more dire. For example, those earning an MBA incur debt of \$42,000; Master of Education, \$50,879; Master of Science, \$50,400; Master of Arts, \$58,539; law degree, \$140,616; and a medicine and health sciences degree, \$161,772 (Bauman, 2018). And the number of graduates pursuing advanced degrees is not small. According to Cataldi, Woo, and Staklis, 44 percent of 2007–2008 bachelor’s degree graduates enrolled in another degree program within 4 years of graduating, with 62 percent pursuing a master’s degree (2017, p. 2).

Perhaps even more alarming is the number of people over the age of 60 who are experiencing crushing debt related to either their own educational investments or The Direct Parent PLUS Loans for their children. There have been a growing number of bankruptcies and senior citizens reporting that they are living on credit cards and/or working much longer than they anticipated as a result of student loan debt of one kind or another. In fact, according to the Government Accountability Office, in fiscal year 2015 more than 40,000 people age 65 or older had Social Security payments, tax refunds, or other federal payments garnished as a result of defaulting on a parent or student loan. On average, it has been reported that the amount of total debt related to student loans for people above the age of 60 grew 161 percent from 2010 to 2017, representing approximately \$86 billion (Andriotis, 2019).

While debt by itself presents some challenges, it is also widely understood that the degree earning premium—that is, the gap in earnings between high school diploma holders and college degrees—has stalled with virtually no change in the gap between 2010 and 2015 (Valletta, 2016). Data from the Georgetown University Center on Education and the Workforce indicate that lifetime earnings for a person with a baccalaureate degree versus an associate degree is \$2.3 million as opposed to \$1.7 million (Greeley, 2018). Labor analytics firm Burning Glass, in a report completed in 2014, observed a phenomenon they termed “up-credentialing,” which essentially was the significant growth in positions that now required a bachelor’s degree that previously did not. In one example, 65 percent of postings for an executive secretary/administrative type position required a baccalaureate degree whereas only 19 percent of those currently employed in the role possessed the baccalaureate degree (Burning Glass Technologies, 2014). Plainly stated, the increasing number of employment opportunities requiring the baccalaureate credential as the ticket for entry (while the earning premium gap shrinks and the cost for the credential spirals) creates what some see as an untenable conundrum. This particular combination of forces sets the stage for considerable anxiety and distress within the public domain as individuals consider the pathways to success available to them.

What sometimes adds fuel to the fire around the cost of higher education is the amenities offered on many campuses (some call it the “amenities arms race” (Koch, 2018; Newlon, 2014; Swartz, 2014), including, for example, lazy rivers (e.g., Universities of Alabama, Iowa, and Missouri and Louisiana State University, the latter financed by student fees), climbing walls (e.g., Penn State, Notre Dame, Cornell, University of Colorado Denver, and Stanford), and first-run movie theaters and hot tubs (e.g., High Point University). Obviously, colleges and universities are using this strategy to increase enrollment in a competitive market, often

at the expense of students whose tuition dollars were funding the amenities. The good news is that spending on these types of “lavish campus frills” is slowing, due in part to rising tuition and student debt (Selingo, 2017a, para. 5).

Investment in these kinds of amenities is only part of the story. Increasingly, postsecondary institutions have had to invest in services such as transportation, childcare, food pantries, financial and mental health counseling, and emergency loan programs, among other services, to fill the gap for students when other societal structures fail to provide necessary support (Cowen & Seifter, 2018; Smith, 2018). Food insecurity has become a growing concern across the nation’s colleges and universities (Phillips, McDaniel, & Croft, 2018). It was reported in April 2018 that more than 570 campus food pantries nationwide are registered with the College & University Food Bank Alliance. In California, a bill was recently passed allocating \$7.5 million to fight campus hunger and to facilitate students’ connection to other public support programs. The State University of New York mandated that all 64 of its campuses provide a food pantry for their students (Esch, 2018). Individual institutions like Amarillo College have created centers to centralize efforts to address students’ needs, creating “a one-stop shop for students to access emergency aid and social services and find resources for their childcare needs . . . also has a free food pantry and clothing bank” (Smith, 2018, para. 7). Unfortunately, at most colleges and universities, these important support services are funded by tuition dollars and student fees.

Furthermore, tuition dollars must also cover unfunded mandates from the federal government to colleges and universities to “undertake and document various activities in their policymaking, planning, and reporting” in order to ensure safe campuses (National Center on Safe and Supportive Learning Environments, n.d., para. 2). These mandates, which number more than 200, include such laws and policies as the Americans with Disabilities

Act, the Drug-Free Schools and Communities Act (DFSCA), the Clery Act, Title IX of the Education Amendments of 1972, the Violence Against Women Act, the Higher Education Opportunity Act, the Family Educational Rights and Privacy Act (FERPA), Federal Policy for the Protection of Human Subjects Regulations, (the “Common Rule”), and the Student Exchange and Visitor Information System (SEVIS), among others (Higher Education Compliance Alliance, n.d.). While many of these requirements are reasonable and important, they are also expensive. For example, Virginia Commonwealth University, in response to a request from Congress, estimated that they spend “\$13 million annually to comply with more than 200 federal regulations,” while the University of Virginia estimated their costs at \$20 million per year (S. Martin, 2017).

For all of these reasons, tuition will continue to increase—as will student debt—unless we change the higher education model. If we do not intervene, the expectation that the ROI for a college degree is a launching pad for young peoples’ careers and lives will not be realized.

**Persistence and Graduation Rates.** Hand in hand with the concern over rising tuition and debt is the disappointing picture of graduation rates. According to the National Student Clearinghouse, 31 million people in the United States have some college credits and no degree (Shapiro et al., 2014). Furthermore, “children from families earning more than \$90,000 have a 1-in-2 chance of getting a bachelor’s degree by 24. That falls to a 1 in 17 chance for families earning under \$35,000” (Selingo, 2018). The U.S. Department of Education reports that “three years after first enrolling, comparatively more first-generation students who began postsecondary education in 2003–04, had left postsecondary education without earning a postsecondary credential (33 percent) than had their continuing-generation peers whose parents attended some college (26 percent) and whose parents earned a

bachelor's degree (14 percent)" (Cataldi, Bennett, & Chen, 2018, p. 4). And to top it off, "the 6-year graduation rate for first-time, full-time undergraduate students who began seeking a bachelor's degree at a 4-year degree-granting institution in fall 2010 was 60 percent" (National Center for Education Statistics, n.d., para. 1).

Add to this group the continued lagging educational attainment of underrepresented minorities, including low-income, first-generation Latino and black students. For example, compared to white adults, the "gap in bachelor's degree attainment has doubled, from 9 to 20 percent for Hispanic residents since 1974 and from 6 to 13 percent for Black residents since 1964" (Office of Planning, Evaluation and Policy Development, 2016, p. 1). First-generation college students still lag behind those students whose parents are degree holders. The U.S. Department of Education indicates that "among 2002 high school sophomores, 46 percent of students who had a parent with a bachelor's degree and 59 percent who had a parent with a master's degree or higher had obtained a bachelor's degree or higher by 2012, compared to 17 percent of students who had parents with no postsecondary education experience" (Redford & Hoyer, 2017, p. 1). In fact, the proportion of first-generation students has been declining, from 37 percent in 1999–2000 to 33 percent in 2011–2012 (Cataldi, Bennett, & Chen, 2018, p. 1). These data on access are especially discouraging given the myriad programs and investment (at the national, state, and institutional levels) over the past decade that have focused on the attraction and persistence of underrepresented minorities.

The situation is even worse for black and Latino adults holding a bachelor's or an associate's degree. In a 2018 study, the Education Trust (n.d.) found that, compared with 47.1 percent of white adults, just 30.8 percent of black adults and 22 percent of Latino adults earned some form of college degree. Loan delinquency is also a serious problem and is reported to be considerably higher across all constituencies and institutional types

among those students who do not complete their program of study (Sankar, 2018). Higher education is failing many of our young people!

Having just cited those discouraging numbers, like others we are skeptical that they provide the whole story. Considerable frustration exists with the graduation data collection methods that historically focused on the traditionally aged student population, which represents a shrinking percentage of the total number of students enrolled in postsecondary education. In fact, in 2016, some 55 percent of students receiving a bachelor's degree and more than 60 percent of students at community colleges attended part-time. In an attempt to create a more complete picture of what is happening in student persistence and completion, a number of changes and initiatives are under way. The Bill & Melinda Gates Foundation and Carnegie Corporation have supported six higher education associations that represent the vast majority of higher education institutions across the nation in an effort to create a more comprehensive view and set of metrics to collect data that include transfer and post-traditional students. The Student Achievement Measure (SAM) is a collaboration of higher education institutions who are voluntarily participating in a project designed to collect data on the many pathways that students take to complete a course of study (Engle, 2016). The National Student Clearinghouse Research Center is also interested in collecting accurate data and has recently begun reporting on pathways students follow across institutions to earn their degrees (Shapiro et al., 2018).

The Department of Education is also trying to address the serious shortcomings in data reporting and announced a number of changes in the fall of 2017. Some of the new data will provide a better picture of part-time enrollments, regardless of whether or not the student was a first-time enrollee or started in a semester other than the fall. The availability of these new data, although

still constrained since student-level tracking remains off limits, will provide more information on more students in more programs (Lederman, 2017).

Increasing accuracy of the data, however, will not address the larger issue that higher education is not supporting millions of students who begin and never finish, impacting their employment opportunities and long-term financial well-being.

**Lack of Access.** We previously mentioned that one-third of student borrowers never complete college—which translates to some 31 million people in the United States with some college credits and no credential (Shapiro et al., 2014). We know the impact that will have on their economic well-being if they do not remedy this situation; one 2017 study indicates that a college graduate’s median lifetime earnings are twice as much as a high school graduate (Schanzenback, Bauer, & Breitwieser, 2017). Furthermore, many of these individuals are now adults with jobs and families, and little extra time or income to support furthering their education.

The discussions regarding access should not only be examined through the lens of racial, ethnic, socioeconomic, or first-generation status. Geographic considerations might also present barriers for some, especially post-traditional students, who represent the largest growing segment enrolled in postsecondary programs. Frequently, post-traditional students are also managing households, family, and work responsibilities while trying to juggle pursuit of an education. Proximity to available education can have a major impact on access, so much so that the American Council on Education commissioned a study to better understand the impact of geography on access. The study determined that there are several “education deserts” across the nation that impact rural students disproportionately (Hillman & Wiechman, 2016, p. 6). A similar study, conducted by the Chronicle of Higher Education, suggests that 11.2 million, or 3.5 percent, of the adult population

reside in “educational deserts” (Myers, 2018, para. 7). Several universities have recognized the potential opportunity in recruiting in these areas and have launched targeted efforts to recruit students; however, most of these efforts appear to be primarily focused on traditionally aged individuals (Pappano, 2017).

**College Readiness.** Even for many who have access, readiness is an issue (ACT, 2013), especially for those high school students who come from low-performing schools. This reality not only keeps some high school graduates out of college, but can also negatively impact their academic achievement and persistence to graduation if they choose to attend. The numbers of students who are required to take at least some remedial coursework upon entry to postsecondary education is significant. According to a report prepared by the National Center for Education Statistics (NCES), 68 percent of those students entering 2-year institutions and nearly 40 percent entering 4-year institutions were required to participate in remedial education. These data are alarming and should raise concern at multiple levels. Remedial coursework often creates additional barriers to persistence and completion by slowing advancement to graduation since they often do not count toward graduation requirements, frequently causing students to exhaust their financial aid eligibility prior to degree completion (Long, 2014). There is some indication that this may be changing, as the California State University System has decided to “replace remedial classes with credit-bearing courses that span two semesters with support classes offered in tandem as a way to help more students at its 23 campuses graduate faster, and with fewer costs” (Black, 2018, para. 1).

In addition to the enormous cost associated with offering developmental courses, we also need to consider the enormous cost of K-12 education that is potentially falling short of preparing students for success. Unfortunately, high-stakes testing is still a reality in secondary education. And given that the

results impact school funding, teachers often find themselves compromising their values and standards to ensure results. Many of these teachers lament “teaching to the test,” by which they mean teaching discrete pieces of knowledge and skills that align with test questions, as opposed to focusing learning on developing knowledge and a set of key skills, practicing them to the point where they can be combined fluently and used with a fair degree of automaticity, and knowing when and where to apply them appropriately (Ambrose, Bridges, Dipietro, Lovett, & Norman, 2010). Craig Jerald provides concrete examples of this as he distinguishes between “curriculum teaching” and “item-teaching”:

For example, if students will be tested on fractions, curriculum teachers will cover a range of knowledge and skills related to fractions so students understand what fractions are, know how to manipulate them mathematically, understand how to use them to solve more complex problems, and are able to communicate with and about them. Item teachers narrow their instruction, organizing their teaching around clones of the particular questions most likely to be found on the test—and thus teach only the bits of knowledge students are most likely to encounter on exams. For example, item teachers might drill students on a small set of vocabulary words expected to be assessed rather than employing instructional strategies that help students develop the kind of rich and broad vocabulary that best contributes to strong reading comprehension. (Jerald, 2006, p. 2)

In other words, item-teaching enables students to directly “map” question types on high-stakes exams—such as standardized state exams—to problems they have done on practice tests. This type of educational experience limits students’ ability, for

example, to understand principles underlying solutions to problems, reason their way through a problem, and/or transfer what they have learned to new contexts—the critical thinking and problem-solving skills that college professors expect high school graduates to possess. So, cost, in both of these cases (higher and secondary education), can be measured not only in dollars and time, but also in educator stress and student motivation and confidence, resulting in students unprepared for college.

There is also a question about the nature and amount of reading and writing that high school students currently engage in that impacts college readiness. ACT reported in 2006 that “barely half of all high school graduates possess college-level reading skills,” and we are not confident that the situation has changed (ACT, 2006). This statistic is alarming given research that clearly shows that “‘deep’ reading and reading for pleasure may be the most important things you can do to prepare for college” (P. Sullivan, 2016, para. 6), because reading is linked to increased cognitive processes over time, including greater intellectual progress, both in vocabulary, spelling, and mathematics (A. Sullivan, 2013, para. 3). That is the good news. The bad news is that a 2014–2015 study by Renaissance Learning’s Accelerated Reader 360 program “raises some serious questions . . . about whether students’ reading habits are preparing them well for study and work after high school” (Gewertz, 2016, para. 4). This study, drawn from the reading habits of 9.8 million American students, indicates that students at every grade level choose reading material below their grade level; in other words, even high schoolers are not challenging themselves by focusing on the “complexity level they’ll face in college” (Gewertz, 2016, para. 4). And, according to National Endowment for the Arts data, young people are simply reading less; in 2007, “nearly half of all Americans ages 18 to 24 read no books for pleasure,” “less than one-third of 13-year-olds are daily readers,” and “58 percent of middle and high school students use other

media while reading” (National Endowment for the Arts, 2007, p. 7). This is concerning given that research (Renaissance Learning, 2015) clearly indicates the importance of reading in building not only vocabulary, fluency, comprehension, writing, and higher-order thinking skills (Anderson, Wilson, & Fielding, 1988; Baker, Simmons, & Kameenui, 1998; Greenfield, 2009; Guthrie, Wigfield, Metsala, & Cox, 1999) but also visual-information processing and speech perception (Dehaene et al., 2010; McBride-Chang et al., 2011), among other skills.

The state of writing and math preparedness is not much better. A recent National Assessment of Educational Progress (NAEP) report indicates that “three-quarters of both 12th and 8th graders lack proficiency in writing. And 40 percent of those who took the ACT writing exam in the high school class of 2016 lacked the reading and writing skills necessary to successfully complete a college-level English composition class . . .” (Goldstein, 2017, para. 10). Mathematics achievement results are similarly dismal; 2017 NAEP data on eighth-grade students show that only 34 percent perform at or above the proficient level (McFarland et al., 2018), and recent data on ACT college-entrance exams from 1.9 million graduates (about one-half of the 2018 graduating class) indicate that “only 40 percent of 2018 graduates taking the ACT met a benchmark indicating they could succeed in a first-year college algebra class,” down from a high of 46 percent in 2012 (Hobbs, 2018, para. 2).

Our brief discussion of this college preparedness issue is not meant to cast aspersions on secondary education, which operates with many constraints; rather, colleges and universities must address the learning needs of the students we get, not the students we wish we had.

**Perceived Skills Gap.** For those who *do* gain access and graduate with a degree, the narrative sometimes remains negative. Many surveys of employers continue to indicate that college graduates lack some of the fundamental skills needed for success

across jobs and industries (Chronicle of Higher Education, 2012; Hart Research Associates, 2015; Selingo & Werf, n.d.). These include the set of what we think of as “intellectual skills”: critical thinking, analytical reasoning, and effective communication (oral and written) with people inside and outside the organization, as well as the ability to solve complex problems, deal with ambiguity and complexity, apply knowledge in real-world settings, and locate, organize, and evaluate information from multiple sources (Carnevale, Smith, & Strohl, 2013). Most, if not all, academics would tell you that these fundamental skills are *deeply embedded* in their respective curricula, which we believe they are—hence the problem. Because faculty are experts in their fields, they often fall victim to “expert blind spot” (Nathan & Koedinger, 2000, p. 209)—they are so far away from novices in their knowledge, skills, and experience that they do not even realize that they are skipping or combining steps, for example, sometimes resulting in inadequate explanations. This unconscious competence (Sprague & Stuart, 2000) means that experts often are not as explicit or transparent in illuminating the thinking process and intellectual skills, which, in many fields and disciplines, are even more important than the content, given that content is always changing and expanding. As a result, students are gaining a set of skills that they are not cognizant of, and even if they are, they are learning those skills within narrow contexts of courses and disciplines, making it difficult for them to then activate and transfer those skills to new contexts, such as their first job (Ambrose et al., 2010). We believe that the skills gap perception is real but that graduates actually do possess these skills: they just don’t know they possess them and therefore they do not access and use them.

The story with the set of “professional skills” noted in skills gap surveys and other research is similar. These skills often include such things as (a) adaptability, (b) the ability to collaborate and work well in teams, (c) self-awareness, (d) empathy,

(e) the ability to continue to learn, build relationships, advocate, and negotiate, and (f) the ability to plan, organize, and prioritize work. Students who participate in civic engagement, service learning, on-campus employment in paraprofessional roles (such as coaches, referees, peer advisers, and resident assistants), or who lead campus organizations frequently develop and practice many of these professional skills. But once again, they are not cognizant that they are developing and honing the skills, and hence do not consciously transfer those skills to other contexts. By the way, the top 10 list of skills recognized by the World Economic Forum as most important in the workforce merge these two sets of “intellectual” and “professional” skills (Centre for the New Economy and Society, 2018), further validating the importance of both.

Any discussion about skills seems to trigger the age-old debate regarding the relevance of a liberal arts degree. We would be remiss here if we did not point out, given the continual attack on the liberal arts, that liberal arts degrees often engage students in both the intellectual and professional skills that employers desire, among other things (Dix, 2016). This debate creates a false dichotomy between “knowing” and “doing” that would be better served if it were replaced with dialogue about pedagogical approaches that would ensure relevance and outcomes, designed to align learning with workforce development needs and the development of requisite knowledge, skills, and commitment to constructively engage in civic activities within our global society. In fact, a recent report by the American Enterprise Institute and Burning Glass Technologies indicated that of the 3.8 million entry-level jobs they analyzed, a liberal arts major could qualify for 1.4 million of them. They went on to say that they see the issue to be less about academic major and more one of the need to cluster desired skills in order to improve job prospects (Schneider & Sigelman, 2018). Additionally, the role of the liberal arts is undeniable in enhancing students’ ability to creatively express their views, discover beauty,

and uncover new interests, all of which contribute to helping learners maintain a healthy life balance (discussed in more detail in chapter 2).

Unfortunately, this narrative about misalignment with workforce needs sometimes results in calls for higher education to abandon nonprofessional degrees, ignoring the skill set honed in those degrees that directly align with what employers say they need in employees (e.g., adaptability, collaboration, self-awareness, empathy, effective communication, problem solving). In other words, matching skills to jobs is just as important (or maybe more important in some areas) as matching degrees to jobs. In his book *You Can Do Anything: The Surprising Power of a "Useless" Liberal Arts Education*, George Anders (2017) translates what employers are looking for when they say, for example, they want to hire employees with critical thinking skills: they want individuals who can (a) work on the frontier (e.g., bring imagination to tackling uncharted areas, think outside the box, adapt to a changing environment, thrive on challenges), (b) find insights (e.g., spotting the less obvious, connecting the dots, filtering and distilling information, dealing with ambiguity), (c) choose the right approach (e.g., synthesize insights to make complex decisions, act on opportunities, find creative solutions), (d) read the room (e.g., understand group dynamics and others' motivations, see the big picture, manage through influence, balance different perspectives and agendas), and (e) inspire others (e.g., energize others to embrace change, convey information effectively, inspire confidence). Anders points out that these are exactly the skills developed and honed in the liberal arts, and he then connects these skills with the kinds of skills employers are seeking. For example, Deloitte, Humana, and the Federal Reserve are looking for that explorer's mindset (working on the frontier); Sony, Dropbox, and Johnson Controls are looking for those who can find insights; FedEx, McKinsey, and PayPal hire those who can engage in choosing the right approach; BlackRock and eBay want

employees who know how to satisfy multiple agendas and keep moving forward by reading the room; and American Express, Cox Communications, and Genentech want those who can be persuasive (Anders, 2017). In other words, the liberal arts do align with workforce needs.

Data provided by the Brookings Institution's Hamilton Project also support this argument; they tracked lifetime earnings by college majors. While acknowledging that liberal arts graduates often earn less than those in some other majors (e.g., engineering, computer science, business, nursing) initially (0 to 5 years out), they fare better in annual earnings with 10–20 years' experience and represent half of the top tenth by major in high achievers' lifetime earnings (Anders, 2017). This is not surprising when you recognize the three "proven paths" high-achieving liberal arts graduates take: in the public sector and at nonprofit organizations; in the money trade, such as venture capital, hedge funds, and private equity; and as entrepreneurs (Anders, 2017). So, the world of work validates the skills gained in the liberal arts in a very concrete way.

The fine and performing arts are as much under attack as the liberal arts when it comes to the value in the workplace and society, despite their many contributions. Although many hold the arts in high esteem because they "illuminate our inner lives and enrich our emotional world" (Mowlah, Niblett, Burn, & Harris, 2014, p. 1), we need to remember that they also impact, in a positive way, the economy, people's health and well-being, society, and the growth and development of our youth. In one study by Arts Council England, which focused on synthesizing research and evaluation studies that presented examples of the impact of the arts, they found, for example, that the arts and culture industry generated billions of dollars through tourism, book publishing, performing arts, and so forth; that "those who attended a cultural place or event in the previous 12 months were almost 60 percent more

likely to report good health compared to those who had not”; that “high school students who engage in the arts at school are twice as likely to volunteer than those who do not engage in the arts and are 20 percent more likely to vote as young adults”; that “taking part in structured music activities improves attainments in math, early language acquisition and early literacy” (Mowlah et al., 2014, p. 35). Data exist within the United States to validate these claims as well; as far back as 1991, The President’s Committee on the Arts and Humanities issued a report that presented data to substantiate the value and worth of the arts and humanities as they “. . . contribute to our wealth and longer-term economic growth; their special ability to create innovations and new environments which advance civilizations; the wide variety of ways the arts stimulate learning; and their unique power for interactions with societies around the world and with the rich diversity of groups within this country” (Murfee, 1991, para. 1). In fact, according to the U.S. Bureau of Economic Analysis and the National Endowment for the Arts, in 2015 the arts contributed “\$763.6 billion to the U.S. economy, more than agriculture, transportation, or warehousing. The arts employ 4.9 million workers across the country with earnings of more than \$370 billion . . . the arts export \$20 billion more than imported . . .” (National Endowment for the Arts, 2018, para. 1). Furthermore, the arts can contribute to the livability of cities and attract investors. So public interest is served in a variety of ways in ensuring that we continue to educate those whose interests and passions lie in the arts (Murfee, 1991).

If you are still not convinced of the value of the arts to practical matters related to employment, read the article “Appreciating the Beauty of Science Ideas: Teaching for Aesthetic Understanding,” in which the authors convincingly describe the “beauty inherent in scientific ideas and scientific discovery” that inspires scientists to explore the world (Girod, Rau, & Schepige, 2003, p. 575). They, like others, recommend “educating the artist within young

scientists”—what they call aesthetic understanding, and cite numerous accomplished scientists who embraced this notion (e.g., Jane Goodall, Dian Fossey, Ernst Mach, Barbara McClintock, Temple Grandin).

Furthermore, engineering educators around the world have been discussing the value of including more right brain experiences to enhance the professional success of engineers to create and innovate. In fact, in 2017 the National Academy of Engineering awarded the Bernard M. Gordon Prize for Innovation in Engineering and Technical Education to Dr. Julio M. Ottino, the dean of engineering at Northwestern University for his “Whole-Brain Engineering” philosophy and practice, which “merges the analytical and technical components of engineering (left brain) with creativity, design and divergent thinking (right brain)” (Fellman, 2017, para. 1). This recognition of the importance of fields like art and design to science, technology, engineering, and mathematics (STEM) is represented in the rise of STEAM (science, technology, engineering, arts, and mathematics), a movement spearheaded by the Rhode Island School of Design, which both encourages the integration of the arts into education and inspires employers to recognize the value of arts to innovation and hire accordingly. In fact, in May 2018, the National Academies of Science, Engineering, and Medicine issued a report that concluded that integrating the humanities and arts into STEAM is, based on an emerging body of evidence, “associated with positive learning outcomes that may help students enter the workplace, live enriched lives, and become active and informed citizens” (Skorton & Bear, 2018, p. 5).

To be fair, universities are starting to come around and respond to the needs of employers. For example, the University of California, Berkeley announced in October 2018 that they were creating an interdisciplinary Division of Data Science and Information to “meet the needs of the booming data science field,” after launching a bachelor of arts in data science in fall 2018

(Dimeo, 2018, para. 1). The Massachusetts Institute of Technology announced the creation of a College of Computing in fall 2018 as well, which would initially include 50 new faculty positions housed in a new building (Paterson, 2018). According to a report in the Pew Foundation's Stateline, about 90 two-year colleges across 19 states are now offering baccalaureate degrees that often are closely aligned with local industry needs, providing a highly cost-effective option leading to good-paying jobs (Povich, 2018). In August 2018, the Georgia Board of Regents approved the offering of "nexus degrees," which are "college credentials that emphasize hands-on experiential learning and skilled knowledge and connections with industry in high-demand career fields" (University of Georgia, 2018, para. 2). The curricula for these degrees are being developed in partnership with industry experts to ensure that they meet current and anticipated workforce needs in high-demand fields. Another example that attracted the attention of the Aspen Institute was the recipient of the 2017 Aspen Prize for Community College Excellence, the Lake Area Technical Institute (LATI) in eastern South Dakota. LATI, in consultation with approximately 300 businesses within their catchment area, have developed 30 two-year programs customized to the specific needs and specifications of local employers (Runnion & Gibson, 2018). There are also several examples of partnerships at the graduate level. To regain public trust, higher education must address both the perception and reality of the skills gap.

**Misalignment with Workforce Needs and Public Interest.**

Beyond the skills gap, there is growing alarm that higher education is simply not meeting and will not be able to meet the needs of the workforce. For example, we continually hear about current job vacancies in STEM fields; a Georgetown study projected 2.6 million STEM job vacancies by 2020, including both new and replacement jobs (Carnevale et al., 2013). In manufacturing alone, the expectation is that 2.7 million employees will retire over the

next decade and that 700,000 additional skilled employees will be needed to meet industry growth—that is a total of 3.4 million workers (Josephs, 2017).

The Georgetown study also indicates that we will see 54.8 million new and replacement jobs by 2020 across all sectors of the economy, with 30.8 million of those due to retirements. For example, the financial services industry will lead with 10 million job vacancies, of which some 50 percent will be new; wholesale and retail trade will experience 7 million job vacancies; government and public education, 6.7 million; and leisure and hospitality, 5 million (Josephs, 2017).

According to the Bureau of Labor Statistics, the health-care industry is experiencing faster than average employment growth, which is projected to continue (Bureau of Labor Statistics, 2017). Given the aging population globally and longer life expectancies, health-care support occupations are projected to grow globally by 80 million to 130 million by 2030 (Manyika et al., 2017), health-care practitioners and technical occupations by 15.3 percent, and personal care and service occupations by 19.1 percent, including nurses, occupational therapists, physical therapists, and speech language pathologists. According to the Economic Policy Institute, there is a shortage of 389,000 K–12 teachers as well (Gould, 2018). These numbers beg the question of how aligned our program offerings are with the needs of the workplace.

Finally, misalignment represents not only knowledge and skills, but also access and time. We already live in a world in which employees need to upskill continually, and many do not have the time, interest, or means to either earn or “go back” for another bachelor’s or a master’s degree. Hence we have the rise of the “shadow learning economy,” which represents “a new set of providers offering education in short spurts, either online or in face-to-face classes” (Selingo, 2018, para. 1). Think boot camps, Coursera, YouTube, and Khan Academy, among others. According

to Selingo, “this behavior in education mimics that of the broader economy, with consumers increasingly seeking alternatives to legacy businesses—take Uber and Airbnb as examples of this phenomenon” (Selingo, 2018, para. 2). Certainly, there are disruptors of all kinds, including companies such as SpaceX, WeWork, GitHub, Udacity, and Amazon, among several others, emerging across a variety of industries. CNBC believes that these disruptors are an expected part of the landscape evidenced by their annual list, six years running, of Top Fifty Disruptors whose “innovations are changing the world” (McGraw-Hill Education, 2018).

Aligning with the needs of employers, employees, and the broader public interest is vital for the future of the higher education sector.

**Political and Social Context.** The current political climate also impacts higher education, and not in a positive way. It has contributed to a rise in anti-intellectualism, anti-science, anti-data, and anti-evidence-based decision making (e.g., climate change, “clean coal,” fracking), hitting the very heart of what educators believe matters most in order to educate graduates who can address the global challenges of this generation.

As we write this chapter, the current U.S. president is attacking the methodology and motives of a study by researchers at George Washington University that puts the death toll of Hurricane Maria (which hit the island of Puerto Rico in September 2017) at approximately 3,000 (Stripling, 2018). Criticisms like these are often used to cast aspersions on all of higher education, creating a hostile environment that questions the validity and veracity of scientific findings of all university-driven research. Not helping the situation are the actual cases of research misconduct that periodically surface as the academy polices the rigor of research and the ethics of researchers. We have seen legitimate cases of plagiarism, use of inappropriate research methods, unacceptable manipulation of data, falsification or

fabrication of data, destruction of data, and so forth that exacerbate the situation, despite the fact that these cases are anomalies, not the norm. As a result of just such cases, universities and the federal government have created processes to both identify and address allegations of research misconduct. In fact, the Office of Research Integrity at the U.S. Department of Health and Human Services maintains a list of those who “. . . CURRENTLY [sic] have an imposed administrative actions against them” (Office of Research Integrity, n.d., para. 1). Further fueling of the fire comes from headlines such as this one from the *Orlando Sentinel*: “UCF lambasted after admitting misusing state funds for new \$38 million academic building” (A. Martin, 2018). Sadly, these occasional transgressions erode public confidence in higher education.

This negative political narrative also invokes the “liberal bias” allegedly silencing conservative perspectives on college campuses, cautioning potential parents and students about the free exchange of ideas that some of us view as vital to preparing graduates to become citizens ready to engage in the democratic process. Add to that the growing concern about the number of international students (raised by the anti-immigrant sentiment and xenophobia), particularly in graduate education, and especially in STEM-related fields, who some fear might eventually use that education against the United States. Unfortunately, the polarization we are seeing in America today is being replicated on many college campuses, leading to intolerance and incivility that disrupts university operations, stresses already tight budgets, and negatively impacts learners’ growth and development. This condition is creating a chilling effect on freedom of expression and the open exchange of ideas.

Some people, like physicist, television personality, and head of the Hayden Planetarium Neil deGrasse Tyson, partially blame the academy for the lack of respect for higher education,

specifically because we do not prioritize communication with the public. In an interview with the *Chronicle of Higher Education* (Patel, 2018), Tyson criticizes higher education's incentive system, which does not value explaining science to the masses; he rightly suggests that anything that is not done in a laboratory (for scientists, but this holds true in other disciplines as well) does not count professionally in academia. Tyson's assertion is bolstered by a recent study examining the metrics and incentives for public scholarship, which does indicate that our traditional reward system in higher education often hinders researchers from impacting public perception and policy (Alperin et al., 2018).

**Fierce Competition and Confusion in the Marketplace.**

Given all of the concerns and challenges discussed above, collaboration across colleges and universities is vital in addressing these issues. While there are organizations that follow policy developments and advocate for change on behalf of higher education—American Council on Education (ACE), Association of American Colleges and Universities (AAC&U), Council of Graduate Schools, Institute of International Education (IIE), National Association of Student Personnel Administrators (NASPA), American Association of Collegiate Registrars and Admissions Officers (AACRAO), American Association of Community Colleges (AACC), American Association of State Colleges and Universities (AASCU), Association of Public & Land-Grant Universities (APLU), and the Education Commission of the States—the current situation has led to fierce competition for survival. For example, some private colleges are now offering price-matching with public in-state tuition, and some public universities offer in-state tuition to out-of-state students (Korn, 2018). For institutions that can afford it, both low- and middle-income students can receive full-tuition scholarships and grants, along with fees and room and board to low-income students (Lewis, 2018). In fact, in November 2018, Michael Bloomberg donated \$1.8 billion to Johns Hopkins University for

the express purpose of financial aid for low-income students to make the admissions process “forever need blind” (N. Anderson, 2018). Furthermore, enrollment of international students continues to decline; American universities realized a 3.3 percent decrease in 2017 and another 6.6 percent decrease in 2018, and we are all vying for those students (Hackman & Belkin, 2018).

This Darwinian mentality to “save themselves” pits institutions against one another in a quest to address declining undergraduate enrollments and continuous decrease in public funding, resulting in a losing proposition for all, because resources go toward this competition rather than other initiatives that might solve the longer-term problems that threaten higher education. Additionally, this circumstance for those colleges focused primarily on traditionally aged students will likely worsen since the number of high school graduates is expected to drop by 9 percent between 2026 and 2031, representing nearly 280,000 students (Selingo, n.d.). Furthermore, these actions confuse prospective parents and students, as well as critics of higher education, about what college really costs, as tuition, fees, and room and board differ from the net price paid (Korn, 2018). In fact, one might see the practices of tuition discounting at private colleges and universities as a direct competitive effort for students. The National Association of College and University Business Officers (NACUBO), who prepares an annual tuition discounting report, indicated that in 2016–2017 the average discount rate for first-time freshmen climbed to 48.2 percent, and NACUBO projected that it would rise to 49.9 percent during the 2017–2018 academic year (Valbrun, 2018). When the 2018 NACUBO report was released for the 2017–2018 academic year, it showed that the actual freshman discount rate exceeded the original projections, climbing to a record 50.5%, with projections for academic year 2018–2019 estimated to climb further and likely be 52% (National Association of College and University Business Officers, 2019). This

tuition-discounting arms race has often resulted in reduced net tuition revenue for institutions to invest in needed programs and services and reduced access for some students, especially in cases where institutional funds are directed to merit rather than need-based aid. In the past, this financial aid “arms race” has benefited high-achieving and high-income students and exacerbated the competition among institutions. The good news, however, is that a recent analysis from the American Enterprise Institute indicates that the practice of need-based (as opposed to merit-based) institutional aid is benefiting low-income students; in fact, their data show an increase in total financial aid to low-income students between 2003–2004 and 2015–2016 (Delisle & Christensen, 2019).

The truth of the matter is that this phenomenon of competition is relatively new as higher education in the United States becomes more homogeneous. Variety was a hallmark of our educational system for many years, as liberal arts colleges, women’s colleges, minority-serving institutions (MSIs), land-grant universities, tribal colleges, research universities, religiously affiliated colleges, and so forth offered unique experiences to different student populations based on their respective institutional missions. Eventually, however, a hierarchy surfaced, and “a consensus emerged about what universities were the most prestigious, and others tried to emulate these top schools and thus to climb up an informal hierarchy” (Altbach, 2010, para. 3).

On top of this “internal” competition among nonprofit institutions of higher education lies the entrance of for-profit institutions, which, as of this writing, are experiencing deregulation under the current administration, likely resulting in an uptick of competition with for-profit universities. In fact, there is optimism in private equity firms as the Department of Education under Secretary DeVos seeks to rescind numerous Obama-era safeguards,

including the Gainful Employment Rule (Star, 2018). For example, the secretary restored status to the Accrediting Council for Independent Colleges and Schools (ACICS), a for-profit college accreditor that oversaw the collapse of for-profit chains like Corinthian Colleges and ITT Tech (Kreighbaum, 2018). As of this writing, this situation remains fluid; however, should more of the rules be rescinded, one might reasonably speculate that growth in the for-profit sector, including those with suspect practices, are likely to be the result.

This is why the moment has come, according to Selingo, to link “multiple institutions to create a modern model of higher education,” which he calls the Networked University, by moving beyond the “loosely coupled federations of independent campuses that typically cooperate only at the margins of the institution on matters where there is low risk and clear agreement on solutions”; think athletics, mission, and geographic alliances (Selingo, 2017b, p. 11). This is the only way that we will, as an industry, solve the problems that we all face and better serve learners, employers, and society. The good news is that networks are emerging. For example, the University Innovation Alliance is a group of public research universities who serve large numbers of first-generation, low-income students, coming together to test and scale solutions to problems of access and graduation in higher education (University Innovation Alliance, n.d.). Like Selingo, they believe that while some competition can be healthy, institutions need to collaborate in order to achieve collective impact, diffuse innovation, and drive needed changes in higher education (University Innovation Alliance, n.d.). Similarly, the Association of Public and Land-Grant Universities has launched an initiative called “Powered by Publics: Scaling Student Success,” which brings together 130 institutions serving 3 million undergraduates, including 1 million Pell Grant recipients, to “focus on solving different

pieces of the student success puzzle” (Association of Public & Land-Grant Universities, n.d., para. 3).

State legislators as well as education commissions and boards are increasingly attempting to create ways to enhance student success through institutional collaboration and alignment. According to a 2018 report by the Education Commission of the States, at least 30 states have enacted policies designed to improve articulation between postsecondary institutions, degree completion, and student success across their states (e.g., community technical and 4-year colleges). These policies take many forms, including things such as requiring transferability of general education core credits and/or associate degree acceptance, common course numbering systems, and reverse transfer policies that retroactively award an associate degree (L. Anderson, 2018). These efforts signal a frustration that educators are not leading the way in achieving these goals in support of the degree completion agenda and workforce development. Nevertheless, these efforts should serve as a catalyst for educators to actively engage and innovate new alliances and solutions rather than struggle under the manifestations of imperfect permutations that legislative and mandated solutions often bring.

The tensions and forces for change we have just laid out, both internal and external to the academy, seem to be reaching a feverish pitch. In fact, in October 2018, Gallup reported that American adults with a “‘great deal’ or ‘quite a lot’ of confidence in higher education” fell from 57 percent in 2015 to 48 percent in 2018 (Jaschik, 2018, para.1–2). Gallup also notes that “no other institution has seen as large a decline in confidence” between those years, including, for example, the military, the church, the medical system, banks, and public schools (Jaschik, 2018, para. 5). This does not bode well for higher education.

## RADICALLY CHANGING EMPLOYMENT LANDSCAPE

On the heels of the second industrial revolution, American philosopher and educator John Dewey is often quoted as having said, “If we teach today’s students as we taught yesterday’s, we rob them of tomorrow” (goodreads, n.d.) While these words were certainly applicable at the time, they unfortunately remain true as we rapidly transition into a global economy fueled by rapidly changing technologies and knowledge in all domains; some refer to this as Industry 4.0. This emerging and fast-paced service and knowledge economy opens new frontiers of opportunity and challenge. As with other major economic transitions over the course of history, the political and social impact of these transitions are significant and will continue to unfold into the future.

**Accelerating Pace of Change.** In his 2016 book *Thank You for Being Late: An Optimist’s Guide to Thriving in the Age of Accelerations*, Thomas L. Friedman convincingly explains why the world seems to be moving at a faster pace of historical change than we have experienced before. He attributes this to three interacting forces that speed up one another: (1) the market and its expansion and speed of globalization, (2) Moore’s law of exponential acceleration of computing power, and (3) Mother Nature—for example, climate change, the extinction of biodiversity, and population growth (Friedman, 2016). According to Friedman, this acceleration is impacting the workplace, politics, geopolitics, ethics, and community, resulting in the need for us to continuously change and adapt, a process that draws on a concept from mechanics known as *dynamic stability*.

Dynamic stability will be a challenge for higher education, a sector regarded as being slow to change. Compounding this challenge is the nature of how people respond and adapt (or not) to

change, a subject well researched. It will be no small feat to overcome the fear of the unknown, the feeling of loss of control, concerns about competence, worry about going outside one's comfort zone, anxiety about losing face for those strongly associated with how things have been done in the past, comfort with the status quo, and so forth (Kanter, 2012). Thankfully, the research on change also includes data on how to effectively lead and manage it. The good news is that some of the research indicates that people do have the capacity to act as change agents because "people are not just products of their environment, they have a deep-rooted desire and capacity to self-regulate their behavior and to participate in crafting the world around them based on their present needs and hopes for the future" (Tams, 2018, para. 6). This is good news given how profoundly the world of work will change. This mentality and accompanying behaviors will be increasingly important as we move through the 21st century.

**Automation.** The pace of technological change, according to Friedman, has been in nonlinear acceleration not only in terms of the computational speed of the microchip, but also in the five basic components of every computing device: integrated circuits, memory units, networking systems, software applications, and sensors (Friedman, 2016). The results of this steady acceleration, resulting in robots, artificial intelligence, machine learning, and so forth, are and will continue to impact the world at large as well as the world of work.

Although headlines often exaggerate the impact of technology by announcing that large numbers of people will be out of jobs, we find the 2017 McKinsey Global Institute (MGI) reports to present a balanced view across sectors of the economy and countries. Their analysis indicates that one-half of work activities globally have the *potential* to be automated using *current* technology, which obviously varies across sectors of the economy and among occupations within those sectors, but that fewer than 5 percent

of occupations can be automated entirely (Manyika et al., 2017). Put another way, about 60 percent of jobs have at least 30 percent automatable activities, translating to automation replacing 9 to 26 percent of work hours. So, for example, healthcare occupations are not likely to disappear, but technology will help medical practitioners in new ways.

So, while only 3 to 14 percent of the global workforce will need to switch occupations, the majority of other workers will have to adapt by upskilling. The good news, however, is that these workers will spend more time on activities that are difficult to automate and that many will find more rewarding and fulfilling—creativity, high-level cognitive capacities, and activities that require social-emotional skills (discussed in more detail in chapter 2).

Lest panic set in, however, these MGI reports clearly articulate that the proportion of work that will *actually* be displaced by 2030 will likely be lower because of technical, economic, and social factors that affect adoption. This is how they describe the current and future state:

Automation will not happen overnight, and five key factors will influence the pace and extent of its adoption. First is technical feasibility, since the technology has to be invented, integrated and adapted into solutions that automate specific activities. Second is the cost of developing and deploying solutions, which affects the business case for adoption. Third are labor market dynamics, including the supply, demand, and costs of human labor as an alternative to automation. Fourth are economic benefits, which could include higher throughput and increased quality, as well as labor cost savings. Finally, regulatory and social acceptance can affect the rate of adoption even when deployment makes business sense. Taking all of these factors into account, we estimate it will take decades for automation's effect on the current work activities to play out fully. (Manyika et al., 2017, p. 2)

It is worth noting that, historically, while technological changes have always wiped out jobs and occupations, they have also always created far more new jobs, which is likely to continue to happen (Paul, 2018; Stewart, De, & Cole, 2015). For those of us in higher education, this means working with employers to anticipate new job frontiers. According to the World Economic Forum (2016, p. 1), “65 percent of children entering primary school today will ultimately end up working in completely new jobs that don’t yet exist.” Further, new technologies do not immediately impact all work environments in the same way or at the same pace. Consequently, the integration of new technologies will vary across industries and workplace impact will be much more like an evolution rather than a “big bang.” Nevertheless, preparation for the changing nature of work is something that cannot be underestimated. In an interview on Charlie Rose’s PBS show, Friedman captured the kind of impact this will have when he said the “social contract of the future” between companies and employees is “you can be a lifelong employee, but only if you’re a lifelong learner” (Falzon, 2016, para. 5).

While the direct impact of technology alone is relevant, so too is its indirect impact in reshaping the global community. New technologies have enabled a myriad of connections and interconnections to develop, crossing borders and opening up new opportunities, resulting in competition and challenges to economies, regulators, politics, and workers.

**Globalization.** Since Thomas Friedman made famous the phrase “the world is flat” in his 2005 book of the same name, it has become increasingly clear that physical and geographical boundaries no longer matter in the world of work—the playing field has been leveled and the interdependencies have become more pronounced (Friedman, 2005). Through expanded developments in communication and shipping, the free flow of goods and services across the globe has flourished. These new means of connectivity

have resulted in an expanded number of places and people participating in the world's economy. This has several consequences, including an increase in job competition for our graduates (e.g., young people in remote villages with bandwidth can compete for jobs around the world) and an increasing need to be culturally agile with the ability to understand, communicate, and work with people from around the globe, which is where higher education enters the picture.

According to the *Financial Times*, “cultural agility is the ability to understand multiple local contexts and work within them to obtain consistent business results” (Financial Times, n.d., para. 1). Paula Caligiuri tells us that “cultural agility is a practice, not an achievement, and building it is a process, not an event” (Caligiuri, 2012, p. 5). It requires the ability to (1) question our own cultural assumptions, values, and beliefs, (2) view the world from other perspectives, (3) recognize differences among cultures (e.g., communication styles, relationships, personal space, power dynamics, decision making, role of individual and group), and (4) respond accordingly. Depending on the situation and context, response may mean adapting (e.g., to the buyer's culture, to the need for greater autonomy for workers in some cases and direct leadership in others), holding firm to the standards of your company (e.g., safety, ethics), or integrating (e.g., coming up with a new approach), and leveraging the appropriate response at the right time is key to success (Caligiuri, 2012).

Because interest, curiosity, and openness are key to cultural agility, both traveling outside of one's country and learning another language can help to develop and hone this important set of skills. The good news is that the number of U.S. citizens with passports has been increasing—from 15 percent in 1997 to 27 percent in 2007 to 42 percent in 2017, although many believe the uptick since 2007 is the result of a change in U.S. law, which now requires a passport for Americans traveling to Canada, Mexico,

the Caribbean, Bermuda, and Central and South America (McCarthy, 2018). For comparison purposes, 66 percent of Canadian citizens have passports and 76 percent of UK citizens as of 2016 (McCarthy, 2018). In November 2018, the Institute of International Education reported that the number of students studying abroad is still increasing, which is promising, although the number is not very impressive; they estimate that about 16 percent of American students earning a bachelor's degree will study abroad at some point during their undergraduate years (Redden, 2018). Additionally, given students' use of social media, they remain closely connected to their home communities, further eroding the benefits of immersion in another culture.

The data on passports are far better than those on Americans with second language skills. According to a 2013 survey, "three-quarters of Americans speak only their mother tongue" (Palmer, 2013, para. 1). In comparison, in 2014, some 54 percent of Europeans were able to hold a conversation in at least one additional language, 25 percent could do so in at least two additional languages, and 10 percent were conversant in at least three (Nardelli, 2014).

Interestingly enough, according to research by Lu et al., at MIT (2017), while working and living abroad might be helpful, that is not as powerful as having close relationships (both romantic and friendships) with people from a different culture, which can happen even if students do not travel abroad. Caligiuri (2012) agrees that working and even living abroad can create an inaccurate assumption that the person has been fully immersed in the culture, which we know is not the case given that many live in expatriate communities, send their children to international schools, and join international clubs, for example. The MIT researchers have found that close relationships lead to higher creativity, innovation, and entrepreneurship because they result in "cultural learning at a deep level" (Lu et al., 2017, p. 1104).

Although recent developments with Brexit and the election of Donald Trump on a platform of isolationism and protectionism have suggested a potential retreat by major economic powers from globalization, leading economists are not inclined to signal that globalization is in reverse (Ghemawat, 2017).

**Changing Nature of Organizations.** It is not only globalization that has changed the employment landscape, but also changes in the nature of organizations responding to a variety of converging forces, including the rise of the gig economy (see the next section), the desire for more flexibility in the workplace, and the need to address increasing complexity in the world.

We are increasingly seeing a transition of organizations into agile ways of working, including moving from “rigid command and control structures” to organizing around short-term and ever-changing project and skills workgroups, discussed in General Stanley McChrystal’s book *Team of Teams: New Rules of Engagement for a Complex World* (McChrystal, Siverman, Collins, & Fussell, 2015). He asserts that F. W. Taylor’s *The Principles of Scientific Management* (1911)—which “drew a hard-and-fast line between thought and action: managers did the thinking and planning, while workers executed”—drove enterprises, for 150 years, to a commitment to efficiency and reductionist planning that simply does not make sense in today’s world (McChrystal et al., 2015, p. 42). This epiphany happened for McChrystal when he took over command of the Joint Special Operations Task Force in 2003 and recognized that though our military was stronger, more efficient, and more robust, Al Qaeda was agile and resilient, and more successful! In his words:

We had to tear down familiar organizational structures and rebuild them along completely different lines, swapping our sturdy architecture for organic fluidity . . . we restructured our force from the ground up on principles of extremely

transparent information sharing (what we call “shared consciousness”) and decentralized decision-making (“empowered execution”). We dissolved the barriers—the walls of our silos and the floors of our hierarchies—that had once made us efficient . . . We became what we called “a team of teams”: a large command that captured at scale the traits of agility normally limited to small teams. Almost everything we did ran against the grain of military tradition and of general organizational practice. We abandoned many of the precepts that had helped establish our efficacy in the twentieth century, because the twenty-first century is a different game with different rules. Adaptability, not efficiency, must become our central competency. (McChrystal et al., 2015, p. 20)

So, what does this have to do with the changing nature of organizations beyond the military? They too, live in a world that has moved from complicated to complex: complicated defined as things that “have many parts, but those parts are joined, one to the next, in relatively simple ways . . .” and complexity defined as “a diverse array of connected elements that interact frequently,” with the density of linkages resulting in extreme fluctuations and unpredictability (McChrystal et al., 2015, pp. 56–57). According to the 2018 Deloitte Global Human Capital Trends, companies are responding by becoming more team-centric, networked, and agile (Agarwal, Bersin, Lahiri, Schwartz, & Volini, 2018). McChrystal provides examples outside the military, including NASA’s movement to embrace complexity through systems engineering/systems management, an approach built on systems thinking, as well as Boeing and Ford (at a time—2009—when GM and Chrysler were filing for bankruptcy) (McChrystal et al., 2015). These “early adopters” of a new approach embraced such notions as collaboration, transparency, and trust by breaking down silos, sharing information, building relationships across teams, promoting cooperative adaptability, and ensuring a holistic understanding among all the moving parts.

At this point in time, many organizations are talking about new ways to organize and distribute work both within and across organizations, including, for example, distributed and interdisciplinary teams and networks (National Academies of Sciences, Engineering and Medicine, 2017) and reduced hierarchical structures and decision authority (Heerwagen, Kelly, & Kampschroer, 2016). For example, Walmart and Target have been focusing on “taming” their respective bureaucracies, with Walmart giving its workers “more say in how their store operates and what it stocks” (Wahba, 2015, para. 8). Zappos has gone even further by embracing holacracy (Zappos, n.d., para. 1) (defined as “a new way of structuring and running your organization that replaces the conventional management hierarchy. Instead of operating top-down, power is distributed throughout the organization, giving individuals and teams more freedom to self-manage, while staying aligned to the organization’s purpose” (HolacracyOne LLC, n.d., para. 1). Deloitte is calling for more cross-functional collaboration as well, including in the C-suite (they call this a symphonic C-suite), invoking the team of team’s approach described by McChrystal (Agarwal et al., 2018).

Agility has also become increasingly important in the business world, typically defined as the ability to respond to change quickly, without losing momentum. Spotify and Netflix are among companies “born agile,” while companies like Amazon, USAA, 3M, and Bosch are embracing the agile approach (Rigby, Sutherland, & Noble, 2018) and launching dozens of teams. National Public Radio, John Deere, Intronis, and Mission Bell Winery are doing so as well (Rigby, Sutherland, & Takeuchi, 2016). After studying the scaling up of agile at hundreds of companies, Rigby and colleagues (p. 40) report that “companies can scale up agile effectively and that doing so creates substantial benefits” in terms of productivity, morale, faster time to market, better quality, and lower risk, but it is important to know which functions

will benefit from being agile. As Cappelli and Tavis (2018) indicate, the agile approach has finally moved from tech to product development, manufacturing, marketing, and human resources.

Along with agility, many organizations are looking to also address employees' desire for flexibility in a variety of ways. A 2017 Gallup survey found that the number of employees working remotely rose from 39 percent in 2012 to 43 percent in 2016, and that those "employees working remotely spent more time doing so" (Mann & Adkins, 2017, p. 4). For those millennials working full time, an increasing number indicate they already have some degree of flexibility in their workplace; a recent Deloitte report indicates that 84 percent of millennials surveyed cite this reality (Deloitte University Press, 2017). This appears to be a trend as well in the world of work, given that flexibility can increase morale, broaden the talent pool, breed loyalty, and increase satisfaction (Biro, 2013). The Gallup survey also reports that 51 percent of U.S. employees are "actively looking for a new job or watching for openings" (Mann & Adkins, 2017, p. 14) and reinforces that the top five reasons people leave their jobs voluntarily are career growth opportunities, pay and benefits, manager or management, company culture, and job fit. Company culture (e.g., embracing flexibility, agility) can play a large part in losing potentially talented employees. At Zapier, a company with 170 employees living and working in dozens of states and countries, they build relationships across the organization in a variety of ways to "re-create the watercooler," including a bot that "pairs up two random people each week to do a call, so employees across the organization can get to know one other," themed internal channels that are not work related (e.g., gardening, World Cup, homeownership, movies), and remote dance parties (Belanger, 2018, para. 19–23). Creating some kind of organizational response to adapt to the changing nature of work will become increasingly important to attract and retain employees.

**The Rise of the Gig Economy.** Some of this change in organizational structure is the result of the nature of project-based work aligning with the interest of young people to engage in the gig economy as freelance and contract workers. This agile talent is also often more cost-effective for companies, and it allows continued new creative energy to enter the organization and provides access to difficult-to-find technical or functional expertise (Younger, 2016). According to the 5th Annual Guardian Workplace Benefits study, some 40 million adults are already engaged in the gig economy, representing nearly 25 percent of the total working population (Guardian Life Insurance, 2017); Deloitte puts the number of people engaged in contingent, part-time, or gig work at 40 percent (Agarwa et al., 2018). And the Guardian survey indicates that 31 percent of employers responding said that they expect to increase their agile workforce (part-time and contingent workers) over the next few years (Guardian Life Insurance, 2017).

Millennials, too, are embracing the gig economy concept, as indicated by the 2018 Deloitte Millennial Survey: “Among those millennials who would willingly leave their employers within the next two years, 62 percent regard the gig economy as a viable alternative to full-time employment . . .” (Deloitte, 2018, p. 20). This sentiment also rings true for millennials in senior management positions: 7 in 10 of those employees report that they would “take on short-term contracts or freelance work as an alternative to full time employment” (Deloitte, 2018, p. 20). These respondents find the gig economy attractive because of its ability to provide increased income, flexibility, and freedom.

**Increasingly Diverse Workplaces.** The demographics of the workforce will also continue to change the world of work as the workforce becomes more diverse across cultural and generational lines. In 2017, there were 56 million millennials, 53 million Gen Xers, and 41 million baby boomers in the workforce

(Fry, 2018). This dynamic will likely continue for a while, given that “more than 40 percent of households headed by people aged 55 through 70 lack sufficient resources to maintain their living standard in retirement,” translating to approximately 15 million households (Gillers, Tergesen, & Scism, 2018, para. 4). Currently, nearly 20 percent of Americans 65 and older are employed in regular jobs (Desilver, 2016). Add to this dynamic the projection that the length of career is expected to expand to 60–70 years, and we will continue to see a multigenerational workforce with all its implications (Gratton & Scott, 2017).

These changing demographics have many implications for the world of work. For example, millennials and Gen Z employees continue to want to work for employers who are focused on improving society and the environment; innovating ideas, products, and services; being inclusive and diverse in the workplace; and providing flexibility (Deloitte, 2018). Smart employers understand these desires and are creating strategies to attract top talent by making learning and development a top priority, establishing an agile workforce strategy, preparing for the demographic shifts, and evolving their organizational culture, among other things (Deloitte University Press, 2017; Guardian Life Insurance, 2017).

Furthermore, according to Irving (2018), though more Americans over 65 will not be retiring, many companies have not prepared for this demographic. In fact, some view it as a crisis rather than an opportunity, not appreciating that these workers’ talents “complement those of younger workers . . . they provide emotional stability, complex problem-solving skills, nuanced thinking, and institutional know-how” (Irving, 2018, para. 6). Based on research from the Milken Institute Center for the Future of Aging at Harvard University, Irving has developed a “longevity strategy” to help companies “create a vibrant multigenerational workforce” (Irving, 2018, para. 8). Researchers at the Stanford Center on Longevity could not agree more:

[T]ypical 60-something workers today are healthy, experienced, and more likely than younger colleagues to be satisfied with their jobs. They have a strong work ethic and loyalty to their employers. They are motivated, knowledgeable, adept at resolving social dilemmas, and care more about meaningful contributions and less about self-advancement. They are more likely than their younger counterparts to build social cohesion and to share information and organizational values. (Irving, 2018, para. 11)

There are many benefits to working in a multigenerational and multicultural workplace. The different life experiences and varying knowledge and skill sets can lead to broader perspectives that may result in new approaches to solving a problem, designing a product or service, and building capacity to lead. A 2011 study of some of the largest U.S. employers conducted by the Sloan Center of Aging at Boston College found multiple benefits for both employers and employees in multigenerational settings. Employer benefits included (a) increased and diversified work experiences, (b) retention, and (c) increased feelings of company loyalty, sense of value, motivation, and team spirit. Increased sales and profitability were noted along with improved customer service, business savings, and organizational reputation as being among the company benefits they cite (Roundtree, 2011). A 2016 study done by McDonald's UK Division found that multigenerational teams were 10 percent happier than same-age teams. One might speculate that happier workers are more motivated and productive (Gartner, 2016; McDonald's Corporation UK, 2016).

Some companies like CVS, The National Institutes of Health, Steelcase, Home Depot, and Michelin have begun to recognize and leverage the value of older employees by offering, among other things, flexible schedules, seasonal work, rehiring retirees, telecommuting, and phased retirement. Other companies like Xerox, BMW, and Nissan have adjusted physical workspaces

to accommodate the aging population of workers. Still others, like PNC Financial Group, Airbnb, and Pfizer, are focusing on intergenerational collaboration, including intentional multigenerational teams and pairings, along with intergenerational mentoring (Irving, 2018).

The presence of multiple generations creates a richer environment within which a broader collection of skill sets is available that can lead to greater creativity and innovation. In fact, the opportunity to create mutual mentorship programs, wherein team members of different generations might be intentionally paired with the goal of each learning and/or mentoring the other in some way, is presenting new opportunities for employee development. As one executive at a digital design firm observed, “Business is much more than trends and technology. It’s applied intuition that takes years of experience to develop” (Gay, 2017, para. 11).

**Employer View of the Future.** All of the changes just discussed lead employers to ask how to prepare for, lead, and manage in a world summed up in the “trendy managerial acronym” (discussed more in chapter 2) VUCA: volatility, uncertainty, complexity, and ambiguity (Bennett & Lemoine, 2014). How does one hire employees who can function effectively in this environment? What will it take to ensure that current employees can “get up to speed” as the roles and skills they (and the organization) need to be successful continually change around them? And how can employers keep talent who are drawn to the gig economy (when that makes sense for the organization)?

Rethinking the hiring process is vital, and unfortunately those doing research in this area do not believe that most employers have yet acted on this reality (Chamorro-Premuzic & Swan, 2016). The employers who are actively changing their strategies are, in fact, hiring for “learnability,” defined as “curious and inquisitive individuals who are genuinely interested in acquiring new knowledge” (Chamorro-Premuzic & Swan, 2016, para.

7). For example, a major pillar in Google's recruitment strategy is to hire "versatile learning animals" who thrive on continuous learning because "when you're in a dynamic industry where the conditions are changing so fast, then things like experience and the way you've done a role before isn't nearly as important as your ability to think" (Schmidt & Rosenberg, 2014, para. 9). According to Business Insider, "smart companies are now asking the bigger question in interviews, 'How are you keeping your ability to learn new things up, now that school is over?'" (O'Donnell Inc., 2016, para. 5). Ernst and Young recruiters say that "to be a standout, candidates need to demonstrate technical knowledge in their discipline, but also a passion for asking the kind of insightful questions that have the power to unlock deeper insights and innovation for our clients" (Chamorro-Premuzic & Swan, 2016, para. 3).

Along with changing the hiring process, we must address the short shelf life of knowledge and skills with current employees, whether through internal learning and development programs or partnerships with colleges and universities. In this new world, learning becomes a continuous need. A recent McKinsey survey reports that executives see "investing in retraining and 'upskilling' existing workers as an urgent business priority" (Illanes, Lund, Mourshed, Rutherford, & Tyreman, 2018, para. 1). Unfortunately, research indicates that "despite spending approximately \$164.2 billion on learning and development programs, many executives still grapple with how to improve and enhance their effectiveness" (Ferrazzi, 2015, para. 2). According to the Association for Talent Development's "State of Industry Report," this translates, on average, to companies spending \$1,252 per employee on training and development in 2015, which represents an increase every year since 2010 (Association for Talent Development, 2016).

There are those who are also focusing on how learning and development needs to change within organizations. One BCG Henderson Institute report recommends that

CEOs should initiate what we call “learning in the workflow,” and these efforts must be adaptive and personalized to individual users and their specific needs, always-on, with real-time support and feedback, “gamified” with social elements that create “learner pull” to encourage learners to participate, measurable, translating to outcomes for both the learners and for the enterprise. (Dyer, Barybkina, Erker, & Sullivan, 2018, para. 10)

Dyer and colleagues also suggest that it is imperative for organizations to create new learning ecosystems where, among other things, learning becomes experiential as knowledge and skills are developed on the job and where managers must “transform from taskmasters to learning coaches” (2018, para. 25).

The good news for employers is that they do not need (nor do they have the capability, expertise, and so forth) to address all of the learning requirements of their employees. They have begun to recognize this and are increasingly partnering with colleges and universities in new and unique ways. For example, General Electric has partnered with Northeastern University to provide an accelerated Advanced Manufacturing degree, which is delivered in a hybrid way at GE facilities and online (Krantz, 2016). In 2014, Georgia Tech pioneered an online master’s degree in computer science in collaboration with AT&T, who made a \$2 million investment to help launch the low-cost program. By spring 2018, more than 6,300 students were enrolled in the program. Given the success of the initiative, AT&T and Accenture collaborated with Georgia Tech to launch another online master’s degree in analytics, another emergent area where talent is needed (McKenzie, 2018). Motorola partnered with Northwestern University to enhance its leadership development, and Caterpillar Manufacturing maintains relationships with Bradley University, University of Illinois, Georgia Institute of Technology, Purdue, and others (Rio, 2018).

These emerging partnerships, designed to enhance employee skills and develop workforce pipelines, are also expanding in technical and vocational programs. For example, Bluegrass Community and Technical College and Toyota developed an Advanced Manufacturing Technician Program, where students receive an associate's degree by taking their classes in the Toyota manufacturing plant (Martin & Samels, 2015). These examples represent the variety of learners with diverse needs and life situations.

All of these factors in the radically changing employment landscape should impact how we design education for the future, as should the diversity of learners and needs, discussed in the next section.

## **EXPANDING LEARNER BASE AND CHANGING LEARNER NEEDS**

If higher education is going to remain relevant and be successful in the future, we need to clearly understand and address the diverse learners' needs as they continue to learn, develop, and grow across their lives. The main groups—which themselves are not homogeneous—include traditional-age college students and the post-traditional and lifelong learners.

A simple review of the most recent statistics from the National Center for Educational Statistics (NCES) shows significant shifts in the demographics of those enrolled and projected to enroll in postsecondary institutions of all kinds (2- and 4-year, public, private, profit, nonprofit). There has been an increase in the number of women, Hispanics, and African Americans since 2000, with a projected increase of 25 percent for Hispanics and 34 percent for African Americans by 2023 (Hussar & Bailey, 2016).

It is no secret that the only constant for “traditional” college students is that they are 18–24 years old. Like all generations

before them, the millennial and Gen Z learners are unique in their own ways, as will be those who come after them. It behooves those of us in higher education to understand the ideals, values, desires, and needs of this population, because they have been shaped by the environment in which they grew up, one that is vastly different from those of us responsible for their continued learning, growth, and development.

There is also another large and diverse group of “post-traditional” learners who will need continual learning throughout their lives and careers in order to stay active in the labor market (Soares, 2013). Some of these people have already earned a credential or degree, some have credits toward a credential but no credential, and others have nothing beyond a high school diploma. The latter group numbers about 80 million (ages 25 through 65) (Blumenstyk, 2018a; Selingo, n.d.). In a report completed by the American Council on Education and based on data from the National Postsecondary Student Aid Study (2011–2012), they state “post-traditional learners have been a consistent and significant presence in higher education, making up close to 60 percent of the undergraduate population in each of the previous three years of the study” (Soares & Gagliardi, 2017, p. 11). Of course, given the discussion earlier in the chapter, everyone in the workforce will become a post-traditional and lifelong learner at some point(s) in their lives and careers. Our responses to successfully educate future learners will have to take many forms depending on their different needs and life situations.

**Traditional Learners.** Many forces have shaped the current and upcoming college population, among them the post-9/11 world, school shootings, climate change, recession, social media, marriage equality, and the first black U.S. president. All of these forces combined result in college students who have had the world at their fingertips (for better *and* worse) through increasingly sophisticated technologies, and yet come from a secondary

school system that, for many, has not fostered curiosity, creativity, or innovation, let alone the reading, writing, problem-solving, and computing skills colleges and universities expect incoming students to possess.

The most recent national data from the University of California, Los Angeles Cooperative Institutional Research Program (CIRP) survey, administered each fall to incoming freshmen across the nation, shows changes in both beliefs and behaviors (Eagan, et al., 2017). For example, the 2016 incoming class indicated rising levels of civic engagement as well as being the most politically polarized cohort “in the 51-year history of the Freshmen Survey” (Eagan et al., 2017, p. 4). We also see in these students an increased concern about global climate change, interest in influencing the political structure, desire to address the world’s grand challenges (e.g., poverty, clean water, race relations), commitment to maintain a work-life balance, and belief that they possess a pluralistic orientation, which includes the ability to see the world from someone else’s perspective (almost 80 percent) and a tolerance of others with different beliefs (almost 80 percent). These socially, environmentally, and politically conscious learners have multiple interests and are already changing the nature of the way colleges and universities operate, for example, by (a) pushing against disciplinary boundaries, (b) eschewing learning as listening/being lectured to, (c) demanding more connection to the real world during their course of study, (d) wanting to design their own programs of study, and (e) yearning for opportunities to learn about entrepreneurship. And despite the presence of technology in their lives, one survey indicates that only 15 percent of Gen Zs prefer social media to in-person interactions with friends (Northeastern University News, 2014).

Gen Z, often referred to as iGen, like other generations before them, have some very interesting characteristics, beliefs, and attitudes that impact their behavior. Jean M. Twenge (2017) identifies

iGens as those born between 1995 and 2012 and has studied them extensively by drawing on four longitudinal survey databases in order to examine changes among the different generations over time. This generation, representing 24 percent of the population (some 74 million), is the most ethnically diverse in American history and is already having an impact on higher education given that iGens began to arrive at college a few years ago. The 10 trends that Twenge's research indicates are shaping these young people (with both positive and negative repercussions) include that they

- are in no hurry to grow up, and they embrace their parents' overprotection,
- spend more time online and texting,
- spend less time face to face with friends and thus do not hone in-person social skills,
- are experiencing more mental health issues (discussed in more detail below),
- are being raised in nonreligious households,
- are risk averse given their desire for safety, including not just physical but also intellectual, social, and emotional risks,
- are practical in terms of work and income and less interested in entrepreneurship (unlike the millennials, who want jobs that are interesting and want to follow their dreams),
- possess cautious attitudes toward relationships and do not prioritize marriage and family,
- are inclusive, and
- are politically independent. (Twenge, 2017)

What impact are they already having on higher education? iGens (a) are less interested in the amenities discussed earlier in the chapter (e.g., climbing walls, lazy rivers, movie theaters) and more interested in safe spaces and trigger warnings, (b) want hands-on and job relevant educational experiences, (c) want to be

treated as individuals, (d) have less experience with alcohol and sex, (e) fear failure, (f) crave face-to-face communication, (g) are less confident and entitled, (h) are more hesitant to talk in class, (i) are afraid to make mistakes, (j) have a strong work ethic, (k) are less independent and want more guidance, and (l) come to college to get a better job and make money, not necessarily to improve their minds (Pappano, 2018; Twenge, 2017).

As mentioned earlier, along with the impressive interests and vast opportunities in front of current traditional-aged students comes increasing stress. According to the American College Health Association, in spring 2018, 87 percent of students reported feeling overwhelmed, 63 percent reported feeling lonely, and more than 80 percent reported feeling exhausted at times (American College Health Association, 2018). The Center for Collegiate Mental Health (2019) tells us that anxiety and depression levels are also on the rise and are taking a toll on students' well-being. And longitudinal data from the CIRP survey indicates a concerning trend, as self-rated emotional health of college freshmen has steadily declined from 1985 to 2015 (Eagan et al., 2017). One source of that stress may very well be that college students are increasingly gravely concerned about their ability to pay for college and the debt they will incur. Over half (55.9 percent) of 2016 CIRP respondents who were incoming students had "some concern about their ability to finance college while 13.3 percent report that they have major concerns about their ability to finance college" (Eagan et al., 2017, p. 7).

Sadly, the picture does not look any better when you consider the next generation coming to college. According to the National Alliance on Mental Illness, citing data from the National Institute of Mental Health, 20 percent of youth ages 13 to 18 are living with a mental health condition, 11 percent have a mood disorder, and 8 percent have an anxiety disorder (National Alliance on Mental Illness, 2019). Although every generation has its shared stressors,

some are unique to the digital natives, particularly the stressors connected to social media. For example, some young people report anxiety about clogging their friends' feeds with a barrage of low-quality pictures that might annoy them, not having the right caption for Instagram photos, and not getting enough likes on their posts (which leads them to delete the post before embarrassment sets in) (Dougherty, 2016). Others in certain socioeconomic groups find the continual scheduling of school, homework, sports practices, band rehearsals, tournaments, and so forth exhausting and stressful, especially because "[e]ach activity is seen as a step on the ladder to a top college, an enviable job and a successful life" (Abeles, 2016, para. 5). In a 2013 study by the American Psychological Association, one in three teenagers reported that "stress drove them to sadness or depression—and their single biggest source of stress was school" (Abeles, 2016, para. 7). This phenomenon becomes increasingly concerning as "A growing body of medical evidence suggests that long-term stress is linked not only with a higher risk of adult depression and anxiety, but with poor physical health outcomes as well" (Abeles, 2016, para. 12).

In August 2018, the American Psychological Association launched its 12th annual "Stress in America" survey and found, not surprisingly, that for young Gen Zs gun violence is a significant source of stress—especially school and mass shootings—along with the political climate, the state of the nation, and their family's financial well-being. Overall, the report found that stress generally is very high across all generational age groups, and while money and work have typically topped the list, this most recent survey placed "future of the nation" at the top of the list for the first time (American Psychological Association, 2018).

Obviously these mental and emotional states are a cause for concern and impact the learning, growth, and development of traditional-aged college students, hence the need for a more holistic, integrated, and student-centered approach to higher education.

As we think about what learners need (chapter 2) and how we design educational experiences to meet those needs (chapter 3), we have to keep in mind the characteristics of these traditional-aged college students.

**Post-traditional and Lifelong Learners.** Besides the traditional-aged learners who will continue to enroll in colleges and universities, tens of millions of adults will be driven by the demands of the economy as well as their own ambitions to engage in further/continued learning. This population is diverse in terms of their motives and life situations, but “finances, family obligations, and even fear can keep them from college” (Blumenstyk, 2018a). This population will continue to grow as the world of work continues to change and as the high school population decreases in coming decades (projected to decrease between 2026 and 2031 by 9 percent, or some 280,000 students) (Field, Fischer, Young, & Selingo, 2018).

This group of post-traditional learners includes (a) 63.9 million adults between the ages of 25 and 64 who have never pursued any type of higher education (Lumina Foundation, 2017), (b) 31 million adults (as of 2014) with some college and no degree (Shapiro et al., 2014), (c) career enhancers who recognize the need for upskilling, and (d) career switchers who either “see the writing on the wall” per the technological impact on their job role and responsibilities or simply decide to move in a new direction.

For those who never pursued a college education, the news continues to be dire. According to Pew Research Center (2014, para. 20), there has been a “dramatic decline in the value of a high school education . . . the typical high school graduate’s earnings fell by more than \$3,000, from \$31,384 in 1965 to \$28,000 in 2013.” This drop in real dollars is considerably worse when adjusted for inflation between the two years.

According to the National Student Clearinghouse Research Center, among the 31 million *some college-no degree population* are

learners who have stopped out, enrolled part time, enrolled as adults (not college age), and enrolled at multiple institutions (Shapiro et al., 2014). This heterogeneous group includes, for example, learners who have two or more years' worth of college experience, those who have enough credits for an associate's degree but do not have the degree, those who attended 2-year institutions exclusively, and those who attended two or more institutions during their educational journey. In other words, the enrollment pathways of this population vary significantly. The majority of multiple-term enrollees are between 24 and 29 years of old, and women are represented more than men in the 30-years-or-older cohorts (Shapiro et al., 2014). We know that completing a degree will impact this population's financial situation, including salary as well as in employer health insurance and pension coverage (Shapiro et al., 2014). In fact, "college graduates with a bachelor's degree typically earn 66 percent more than those with only a high school diploma" and "over the course of a lifetime . . . earn approximately \$1 million more . . ." (U.S. Department of Education, 2015, para. 3).

These first two groups (no higher education at all and some college-no degree) have become increasingly visible through the agendas of state governments, multiple foundations, and new organizations as well as new institutions and older universities and colleges that focus specifically on adult learners. This is why the Institute for Higher Education Policy (IHEP), along with the Lumina, Kresge, and ECMC foundations and Great Lakes Higher Education Corporation & Affiliates, has launched (in 2018) a campaign to help colleges and universities with what it calls "degree reclamation" (in the past referred to as "reverse transfer"). This campaign will focus on helping those who have earned enough credits but who do not have a degree to obtain the degree and, for those who are a few credits short of earning a degree, work toward helping them complete those final

courses (Blumenstyk, 2018b). This \$5.8 million initiative will “train college officials—teams of registrars, marketers, institutional researchers, advisers and IT experts—in the skills they will need to identify and counsel students eligible to earn a reclaimed degree or return for their final credits” (Blumenstyk, 2018b, para. 7). A lot of data exist for these 31 million people, data that college and universities will find enlightening as we think about the future of higher education. For example, the New Jersey legislature recently voted to make reverse transfer a statewide policy, as have other states, according to the Education Commission of the States (Blumenstyk, 2018b; Education Commission of the States, 2018). The Lumina Foundation’s goal is to increase “the proportion of Americans with high-quality degrees, certificates and other credentials to 60 percent by 2025,” and their strategic plan includes increasing attainment for *returning adult students* by 2 million by 2020 and increasing by 3.4 million *adults with no recognized postsecondary education* (Lumina Foundation, 2017, pp. 3-4). The Bill & Melinda Gates Foundation has invested nearly \$4 billion since 2000 to “improve high school graduation and college readiness rates, and expanding access to college” (Bill & Melinda Gates Foundation, 2008, para. 13).

Both new and existing universities also support adult learners. For example, College Unbound, founded in 2009, is designed for adults who want to *reenter* college and earn a degree. Their strategy is that “the academic content and instruction build on earlier studies and life experience” (College Unbound, n.d., para. 1). Thomas Edison State University has served the needs of adults since 1972 (Thomas Edison State University, n.d.), as have universities like University of Maryland University College, which was founded to serve adults more than 70 years ago (University of Maryland, n.d.), and Brandman University, which spun off from Chapman University in 2009 and now focuses on adult learners. Furthermore, the Tennessee Reconnect program provides adults

over the age of 25 with free tuition (and no fees) at community college for those interested in earning an associate's degree or a technical certificate (Gonzalez, 2018). Complementing these programs are new advocacy groups that have emerged recently to promote the agenda of adult learners, including the National Adult Learner Coalition (UPCEA, n.d.), Higher Learning Advocates (Higher Learning Advocates, n.d.), and the Council for Adult and Experiential Learning (CAEL, n.d.).

The other two groups that comprise post-traditional learners are the career enhancers and career switchers, who seek to move either horizontally or vertically in their current job or change to another career. McKinsey Global Institute estimates that, by 2030, some 14 percent of the global workforce (about 375 million) “will likely need to transition to new occupational categories and learn new skills” (Manyika et al., 2017, p. 1).

The *enhancers* will need to identify specific skills and knowledge that they lack and look for educational opportunities that align with their needs, finances, and life situations. In a Pew Research Center (2016) survey, 87 percent of employees responding believed that it will be necessary for them to develop new skills throughout their career in order to keep up with ongoing changes in their job and industry. Current graduates also recognize the reality; Accenture reports that 97 percent of 2017 graduates said they will need on-the-job training to further their careers (Lyons, Lavelle, & Smith, 2017). In fact,

Millennials and Generation Z have a different view of workplace learning. They understand more than the rest of us that rapid and discontinuous change in products, services and ways of working mean that life-long learning is a critical element of the workplace. Deloitte points out that for millennial professionals, ongoing development support trumps all other “benefits.” (Younger, 2016, para. 8)

As we discussed in earlier sections, if 60 percent of jobs have at least 30 percent of automatable activities per tasks that are repetitive, mundane, and rote, the numbers of those needing continual education will not be small.

Lest we think that continuous learning is important only for employees generally, Risto Siilasmaa, the chairman of Nokia, explains in a piece he wrote for the Harvard Business Review why and how he engaged in gaining a basic understanding of machine learning as well as ensuring that every employee has the same basic knowledge. According to Siilasmaa,

... as a longtime CEO and Chairman, I had fallen into the trap of being defined by my role: I had grown accustomed to having things explained to me. Instead of trying to figure out the nuts and bolts of a seemingly complicated technology, I had gotten used to someone else doing the heavy lifting. Why not study machine learning myself and then explain what I learned to others who were struggling with the same questions? That might help them and raise the profile of machine learning in Nokia at the same time. (Siilasmaa, 2018, para. 3)

While Siilasmaa turned to a series of massive open online courses (MOOCs) on machine learning, deep learning, and convolutional neural networks, followed by extensive reading on the topics, McKinsey research indicates that chief executive officers' primary methods of continual learning include turning to peers outside their company; engaging mentors who have experience; and gaining, practicing, and embedding new skills intentionally (Dotiwala & Kumra, 2014). These practices, particularly turning to peers and mentors, may be outdated given the fast pace of change in the world, which means these individuals may not have the requisite experience to share.

Understanding *career switchers* might be difficult, because the Bureau of Labor Statistics (within the U.S. Department of Labor) does not report on how often people change careers or how many different jobs individuals have over the course of their work life (despite data we often see cited in the popular press). So, we have no historical data to work from. We do have data, however, from various surveys that ask the question of current employees from which to work. For example, a Harris Interactive Survey reported in 2013 that “[n]early 80 percent of workers in their 20s said they wanted to change careers, followed by 64 percent of 30-somethings and 54 percent in their 40s” (Reaney, 2013, para. 5). More recently, a survey by the University of Phoenix (2017, para. 1) indicated that 58 percent of working adults were “somewhat interested” in a career change. Given both the interest these surveys indicate and the data we cited earlier in the chapter about the impact of technology on the world of work, we need to anticipate and prepare for this group as well. Some universities have already begun to address the needs of career switchers. In fact, the state of Virginia has aligned this reality with their needs, creating the Virginia Career Switcher Alternative Route to Licensure Program, which recognizes and builds on the life experience of these individuals and prepares them for a teaching career in the state (Virginia Department of Education, n.d.).

What we do know about *older* post-traditional learners in general, despite which of the four categories they fall into, is that their continued education and training must look different from that of younger workers given such things as their life experience and life commitments. Shih, Rudnick, and Tapen (2018) recommend shorter work-based programs, stackable credentials, wraparound support, and maybe most importantly, helping older learners recognize their potential as they often underestimate what their capabilities are.

Recognizing and embracing the needs of these diverse learners is both an imperative and an opportunity for higher education. But it means that we must do some things radically different, which is no small order for a system steeped in tradition.

## CONCLUSION

The belief persists that postsecondary education provides a promising path to the middle class and can also provide an opportunity for individuals in pursuit of career advancement at any stage of life. The link between work, success, and education is a well-worn path that has been traveled by an expanding and diversifying demographic over the history of American higher education, beginning most notably with the signing of the first Morrill Act in 1862 (Library of Congress, n.d.). This act was intended “to support the needs of Agriculture and Mechanical Arts” and more notably provide a “college in every State upon a sure and perpetual foundation, accessible to all, but especially to the sons of toil” (Loss, 2012, para. 3). This trajectory of expansion and inclusivity is well documented across the growth of American higher education and, as Martin Trow observed in 1999, new technologies have freed education from the constraints of time and place, consequently contributing significantly to changing the nature and potentialities toward creating universal access and participation in postsecondary education. He goes on to say that this “will surely have revolutionary consequences for existing institutions and systems of higher education, as well as for the larger societies which sustain and depend on them” (Trow, 2000, p. 308).

If one accepts that the world will continue to change (even if the pace slows down a bit) and that people will live longer, resulting in expanded work lives, then it is obvious that a college degree,

even advanced degrees, will not be enough to sustain our graduates throughout their lives. Continuous learning will be essential, and those colleges and universities that adapt will succeed whereas those that choose not to, do so at their own peril.

What will this entail? We will need to fundamentally question all of the assumptions under which we have been operating, about our learners and how we prepare them for their lives and work, as well as the ecosystem that supports this endeavor, in order to design an education that is robot-proof (Aoun, 2017). This includes rethinking such things as (a) the 4-year degree, (b) the semester or trimester system, (c) credit hours and seat time, (d) pedagogy, (e) overemphasis on content at the expense of skills, (f) how financial aid works, (g) the tenure system, (h) business practices, and (i) how we deliver student services. While the 4-year degree for 18–23-years-olds will most likely continue to exist for a subpopulation of learners, the larger need will be for new and/or expanded knowledge and skills for those already in the workforce.

In the next chapter, we explore what all of these different learners require to align with both workforce needs and prepare them for their roles as citizens of a flat world who need to address the grand challenges they will take on, such as poverty, clean water, clean fuel, and inequality. In chapter 3, we discuss how higher education might change to help accomplish that.

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