

WHAT COULD IT LOOK LIKE IN 2025?

Based on present-day trends shaping American academia and society, here are four future scenarios that institutions may grapple with in the next 10 years.

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It is generally accepted that we are living through a major inflection point in American higher education. Challenges from technology, demographics, policy, and popular attitudes are casting doubt on many durable components of colleges and universities. Above all looms a sense of financial crisis, as some campuses and systems face threats to their sustainability.

In grappling with these challenges, we must open our vision to account for the possibility of significant, even radical change. It is easy to expect incremental adjustments to our institutional present, and those corrections may well occur: slight alterations to student numbers, and tweaks to endowments or state subsidies. Yet we should consider other options, given the magnitude of the present crisis and the unlikelihood of it being settled in the near term. Technology alone has the capacity to upend many of our practices and assumptions.

Scenarios Tell the Story

The futures field offers several ways of helping us think through such possible transformations. One classic approach for improving our ability to plan for the future is the scenario method. This involves the creation of possible futures, each strongly influenced by one or two drivers. These visions are really stories—narratives of how the world could change. These scenarios are accessible ways to engage audiences with potential change, enabling individuals to see themselves in a new world, sometimes through role playing.

In this article, I share four such scenarios, each of which presents major challenges and opportunities for higher education finance and administration. All but one scenario rests on a single present-day trend growing in size and influence, strongly shaping American academia and society. For discussion purposes, I set these scenarios roughly a decade from now, in 2025, after the short-term future and prior to the long term.

SCENARIO 1 PEAK HIGHER EDUCATION

What would campuses look like if the current decline in enrollment (2014–present) continues?

We can imagine multiple reasons for this to occur. America's K–12 population is no longer growing, and is actually in decline in many states, especially those in the Midwest and Northeast. This cramps the incoming student flow to institutions devoted to traditional-age undergraduates. Their graduates, more burdened by debt than any prior generation, having come of age during the worst economic crisis of the past 80 years—and better educated than most—are delaying childbirth, making it likely that the next generation will also be small in numbers.

Recent anti-academic attitudes could strengthen the enrollment decline. These include fears of escalating tuition and skepticism about the efficacy of postsecondary education, especially in the wake of the book, *Academically Adrift: Limited Learning on College Campuses* (University Chicago Press, 2011). The historically unusual alignment of both political parties in criticism of higher education could feed such attitudes, as would the continuation of media scare stories. Today's interest in skilled trades, which dropped over the past generation, could encourage would-be students to apprentice themselves instead to carpentry or plumbing. Additionally, we could see the emergence of more alternatives to traditional higher education, such as General Assembly, which describes itself as a global educational company focused on the most relevant and in-demand skills across data, design, business, and technology.

A decade of such a decline would have certain effects on American higher education. The reduction in the total number of students would mean, at best, less thickly populated campuses, if not fewer institutions. The number of full-time faculty would likely shrink, as adjuncts teach classes, or those classes are not taught at all. Administrations would probably expand their current levels of international recruitment; if successful, campuses could become much more cosmopolitan than they presently are. Campus leaders may

also recruit more extensively from adult learners and less-prepared populations; doing so would likely entail expanding student-support programs and remedial classes.

SCENARIO 2 HEALTH-CARE NATION

How would campuses change if health care becomes the leading engine of the American economy?

Health care already has a massive economic presence, employing huge numbers of people directly (nurses, radiologists, hospital administrators, and so forth) and indirectly (the insurance industry). That scale is likely to grow as the population ages, since, statistically speaking, the older one is, the more health care one consumes. Medical innovation is also likely to grow the entire sector, as we develop new treatments, technologies, and medications. I will also posit that the currently byzantine financial structure does not become significantly simplified, so those costs keep rising. Moreover, Baumol's "cost disease" continues to apply to most of medical care. (The Baumol effect involves a rise of salaries in jobs that have experienced no increase of labor productivity, in response to rising salaries in other jobs that experienced the labor productivity growth.)

Reflecting these developments, campuses would change in certain ways. It's no stretch of the imagination to envision a larger presence of medical and allied health care in the undergraduate curriculum, along with a parallel growth of graduate school numbers. If today's tendency to gender the life sciences as female persists, we should expect the student body (and professoriate) to become even more populated by women. At the same time, related STEM (science, technology, engineering, and mathematics) disciplines such as robotics and chemistry should grow, as would classes with medical tie-ins: health-care finance, medical ethics, and so forth.

The last points suggest campuses with greater technological capacity, from wet labs to cyberinfrastructure (recall the challenges in sharing very large MRI files). Unless present-day financial constraints lift, this could necessitate reducing the rest of campus offerings (i.e., the humanities and social sciences.) The physical plant of a campus could also change in terms of space exchanges with local medical institutions, as more students spend more time in clinics and hospitals, and medical staff make use of campus facilities.

SCENARIO 3 TUTOR ME, SIRI

What happens to colleges and universities in an age of advanced automation?

Let us resist grand narratives of radically disruptive and unforeseen technologies or posthuman singularities and focus only on the possibilities inherent in present-day automation achievements and trends. If we follow the artificial intelligence trend line—from an AI conquering a chess opponent (1996–97) to a more recent one defeating humans at Go (a two-person game of strategy said to have been created in China more than 3,000 years ago)—then extend forward a line of similar development, by 2025 we should expect not the HAL 9000, but software capable of mimicking some functions currently performed by humans, such as competent tutoring, at least.

In 2016, we already have decent programs for teaching foreign languages (Duolingo) and producing journalism in several fields (Automated Insights Inc. and Narrative Science); it is almost conservative to imagine better versions of these after 10 more years of energetic creativity. It is certainly no stretch to conceive of AIs available for both consumer and enterprise use.

How This Can Happen

Let us review the ways by which such advances in automation can occur. Substantial governmental and commercial investment combines with intensive academic work to produce development after development. Progress in the fields of learning science, human-computer interaction, and, of course, computer science drives AI forward. Added to the mix is the large and growing corpus of machine-readable open content, from Wikipedia to open data to materials published under a Creative Commons license, all of which provide free and legitimate fodder for algorithms learning the world.

Given the availability of more advanced AI and the clear hunger for its use demonstrated by businesses, we can anticipate a steady growth in the number of jobs and job functions outsourced to computation. If human creativity does not make up new jobs to replace these, which seems to have been the case for the past several decades, we may expect a steady rise in unemployment.

Alternatively, we could see more employees working as "cyborgs," seriously integrated with assistive AIs in doing their job. Think of farmers using GPS to organize robotic sowers, or diplomatic staff constantly consulting a mix of social media, mapping tools, and discourse analysis software. Either of these developments, mass unemployment or

a definition of work as computation, should elicit changes in any education system hoping to prepare students for careers. Additionally, should either (or both) of these occur, we can expect culture to change, as so many people define themselves in terms of their work. What happens to self-definition when one is likely to not work for a major section of adulthood, or when one is heavily intertwined with nonhuman assistants?

Other Changes

Higher education could well change in other ways. The rise of automation (we can include robots here along with artificial intelligence) should be accompanied by serious expansion in relevant fields: computer science, robotics, mechanical engineering, and mathematics; hybrid fields may also arise connecting AI to other areas, such as psychology or political science. A Two Cultures divide could occur, if the humanities and nonquantitative social sciences do not participate in automation, or stake out critical responses. Moreover, and more challenging, we could see the appearance of scholarly automation as AIs learn to assess the scholarly record. When might we see software appear as a scientific paper's co-author? How would this change our sense of what research means?

Teaching could well change if better tutoring software becomes available. Financially pressed institutions might outsource some of their curriculum to apps, instead of hiring teaching staff. Enrollments might drop if would-be students view software as a competitive choice to a university. In line with the rest of the workforce, "cyborg" instructors might become the norm, each faculty member relying heavily on a mix of digital tools to provide students with content, testing, and analytics. Indeed, being able to orchestrate this kind of software suite may become desirable, then required, for faculty positions.

SCENARIO 4 KEEP ON, KEEPING ON

What would American higher education look like if *no* major changes occur? We can imagine colleges and universities fighting hard to maintain current practices in the face of these noted changes and others, drawing on institutional conservatism to preserve policies and tradition. We can add to this the proviso that no major social transformation occurs over the next decade, something that is always possible. Within this scenario framework, imagine a 2025 built by extrapolating today's trends.

The social context would be marked by higher income inequality, roughly on a par with America circa 1900, leading some to refer to the decade as a new Gilded Age.

Demographics would reveal a more multiracial America, as the white population declines as a proportion of the whole. Academic outcomes from K–12 schools would be marked more deeply by class and race than they are in 2016.

The gradual reduction in per-student state support of public colleges and universities would reach very low levels, perhaps driving some institutions to exit their state systems entirely and become private. The rest would effectively become privatized, largely dependent on tuition and gifts for survival. A small group of the most well-endowed campuses would see their wealth increase, and would pull away from the rest of American higher education, with income inequality's growth reflected in inter-institutional dynamics. These schools would be more transnational than they are in 2016, given the growth of international students and campus units abroad.

The age of the student population would grow, with the average age of a student approaching 40. A growing number of classes and programs might be aimed at the booming senior population. The number of nonteaching and nonresearch staff would keep growing, leading to further charges of "administrative bloat." Tenure, having been in decline since 1980, would be rare; most faculty would be adjuncts, assessed and compensated on a per-class or per-hour basis.

Technology on campus would only change incrementally, consistent with this scenario's conservative structure. Given trends of hardware disintegrating into multiple devices (phone, tablet, laptop, personal trackers, networked objects, and so forth), we should expect a larger plurality of machines for campus IT to support. Similarly, software progress indicates a greater variety of tools to be understood, expected by the community, and, sometimes, supported. Each technology user will generate a large amount of data, which the institution collects, analyzes, and preserves. The historical shift of media user habits from passive consumption to active creation suggests a recasting of students as content producers where their artifacts (essays, reports, videos, posters, animations, datasets, and so forth) need some degree of institutional curation.