

# GOOD JOBS IN BAD TIMES

*The pandemic has dramatically changed the outlook for new college graduates. Here's how higher education can chart what's next to prepare students for life after college.*

By Jeffrey Selingo  
& Matthew Sigelman



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# Introduction

For the Class of 2020, their final year of college will always be remembered as a tale of two economies. When the academic year started in the fall of 2019, they were destined to enter the best labor market in 60 years. For higher-education institutions, times were pretty good, too. Even in the face of persistent questions about the value of a college degree at a time of rising tuition prices, campuses continued to coast on the momentum of a strong economy to build new academic programs in high-demand fields and drive their overall enrollment.

But then came the Covid-19 pandemic.

Week after week, new claims for unemployment benefits topped 1 million. More than 11 million jobs were lost between February and August 2020. Suddenly, the employment prospects looked bleak not only for the Class of 2020, but also for their counterparts still in college. “I’m worried for them,” Lisa Kahn, an economist who has studied how recessions affect college graduates, told the *New York Times*. “If they’re graduating into a large recession, they’re going to suffer some pretty severe short-term consequences. And that’s probably going to stay with them for almost the next decade.”<sup>1</sup>

It will be quite some time before we understand the full impact of the coronavirus on the long-term labor market and higher education as a whole. But we know from previous business disruptions that what are seen in the moment as temporary shifts often turn into lasting ones. Even in the broader higher education context, the quick pivot to online courses is likely to bring about a permanent shift in how students learn.

As a result, higher education leaders would be mistaken to view the current economic headwinds as a short-term blip in the job prospects of graduates. If history is any guide, new graduates could struggle for years. Studies have shown that graduating in a recession affects salaries, employment prospects, and even the health and happiness of young adults.<sup>2</sup> Graduates who started their careers in the immediate aftermath of the Great Recession of 2008, for instance, had lower employment rates and lower earnings all through their first decade after college compared with people at the same age who graduated before the recession hit.<sup>3</sup>

Previous research from Burning Glass Technologies has found that the first job after graduation is critical to holding positions years later that are appropriately matched

to a college-level education. In the 2018 report, “The Permanent Detour,” by Burning Glass and the Strada Institute for the Future of Work, we concluded that those who start behind in the job market tend to stay behind.

The quick pivot to online courses is likely to bring about a permanent shift in how students learn.

Our major finding in that study, undertaken at the peak of the market when employment prospects should have been at their sunniest, was that four in 10 college graduates were *underemployed* in their first job—meaning they were in jobs that didn’t require their level of education. Even more troubling, those who graduated into underemployment were five times more likely to remain stuck in mismatched jobs after five years compared to those who weren’t underemployed. Ten years later, three-quarters of workers underemployed at the five-year mark remained there.

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# Cultivate Demand

When times get tough as they are now, young adults tend to hunker down. They take any job as a placeholder or get more education to wait out an economic downturn. Colleges follow a similar strategy hoping to weather the storm with short-term fixes, like across-the-board budget cuts or restructuring plans.

But for higher education, this is not a moment to simply stand pat. Here's why: Survey after survey of young adults in the decade since the Great Recession has found that they increasingly see college through a single lens—as a means to a good job. This comes as the value equation for higher education is shifting rapidly in the middle of the pandemic. Students and their families, for instance, are questioning the expense of paying for in-person tuition for online courses—what some derisively refer to as “glorified Skype.”

Such questions about the effectiveness of remote college aren't limited to virtual instruction. Students are also anxious about the campus experiences and infrastructure they're being charged for, too, yet not able to easily access, like career services. While the job market has tightened considerably for college graduates, our research has found that there are still

openings in a number of occupations and industries, including technology, sales, and finance, that either provide a good salary or important skills. To help students compete for those jobs, however, colleges need to reframe how they approach preparing students for careers.

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If students don't think a college will do enough for them to get hired after graduation, they will look elsewhere. Any subsequent shift in enrollment will have consequences for institutions already operating on thin margins and worried about a demographic cliff in the number of high-school graduates projected to arrive in the middle of this decade. “The transition from college to the first job is important all the time, but especially in a recession,” said Christine Cruzvergara, vice president of higher education and student success at Handshake, a recruiting platform. Yet half of college career

centers have had their budgets cut in 2020, Cruzvergara said, “which seems incredibly shortsighted if you're trying to prove your value to skeptical students and their families.”

Rather than play it safe right now, we believe the moment is ripe for colleges to cultivate greater demand by building fresh degree programs, offering new kinds of credentials, and establishing complementary advising services that can get students into careers. Doing so, as we discuss below, will necessitate four approaches to better aligning an institution's academic offerings with the pandemic job market. It will also require college leaders to look beyond the dwindling group of traditional students to better serve the tens of millions of working learners who can expand the market for higher education.

What is clear from our research is that for learners of all ages breaking into the post-college job market is increasingly about the skills they possess, and less about where they go to school or their specific degree. Burning Glass has identified 14 foundational skills critical to unlocking millions of jobs, even in this economy. These skills across a range of domains—digital, human, and business—are the building blocks of successful careers, not only facilitating the first step but also



gaining importance over the span of a working life. And perhaps most important for institutions to consider is that they transcend traditional academic disciplines and majors. “In 1970, the top three skills required by the Fortune 500 were the three Rs: reading, writing, and arithmetic,” said Linda Darling-Hammond, a professor of education at Stanford University. “Now they’re teamwork, problem-solving, and interpersonal skills. We

need schools that are developing these skills.”

Historically, moments of crisis have served as a powerful impetus for innovation in higher education. Think of the Morrill Land-Grant Act in the midst of the Civil War; the high school movement during the Great Depression that laid the foundation for the GI Bill after World War II; the Higher Education Act and the

growth of community colleges and regional public universities in the middle of the civil rights movement of the 1960s. This time should be no different. Creating new pathways from education into careers will not only ensure that students obtain jobs in a tough economy, but it will also provide a much-needed lifeline to institutions in the middle of the pandemic and help them thrive long after it ends.

# The Lost Generation

Heading into the spring of 2020, months before graduating from the Savannah College of Art and Design, Sarah Doncals already had her dream job lined up at Uber in user design. But in early May, she received notice by email that her offer was rescinded as part of a massive wave of job cuts at the company. “My heart dropped,” Doncals told a reporter in May 2020. “Now I had to start the search from scratch.”<sup>4</sup>

Doncals wasn’t alone among college students in losing a job offer and then facing the daunting task of looking for work in the midst of Covid-19. What makes the situation

particularly tough for new graduates is that their degree isn’t the key to unlocking job openings as it might have been for their counterparts in past economic slowdowns.

Indeed, when job postings started to fall off in the spring of 2020, those listings that required a college degree—whether an associate’s, bachelor’s, or graduate—declined *more* than jobs for high-school graduates (see Figure 1). Graduates hit particularly hard were those with a newly minted bachelor’s degree. Not only did postings for bachelor’s-level jobs fall the most, but entry-level jobs for such degree holders

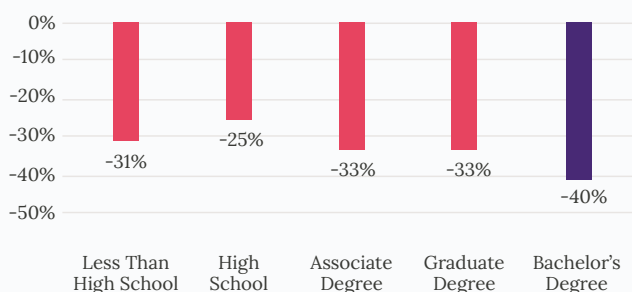
dropped most precipitously among them. It’s a classic Catch-22 for new graduates in this economy: Employers want experience, but no one wants to be the first employer to provide that experience (see Figure 2).

That the bottom rung has been knocked out of the career ladder has been a growing trend over the past decade. Wharton economist Matthew Bidwell, analyzing Burning Glass data, found that jobs requiring a degree tend not to be open at the entry level (see Figure 3, Page 6). But with new graduates now competing with millions of experienced workers who have been sidelined, the pandemic

Figure 1.

## Job Postings Declining for Degree Holders

Decline in U.S. job posts by education requirement, average % change, March to May 2020

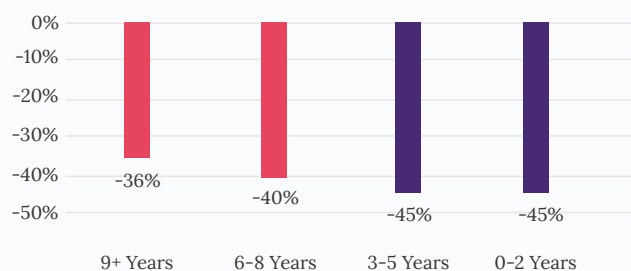


Source: Burning Glass Technologies

Figure 2.

## For College Graduates, Experience Counts

Decline in bachelor's-level postings, by experience required, average % change, March to May 2020.

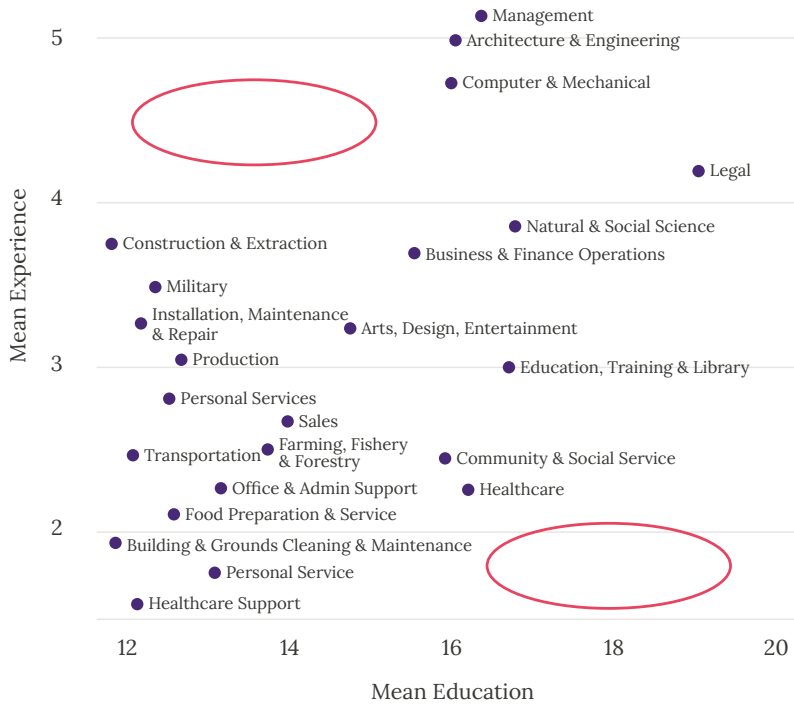


Source: Burning Glass Technologies

Figure 3.

The Career Ladder’s Missing Rung

At the bottom right, occupations requiring a bachelor’s degree don’t have many entry level openings. At the upper left, occupations with lower education requirements don’t value greater experience.

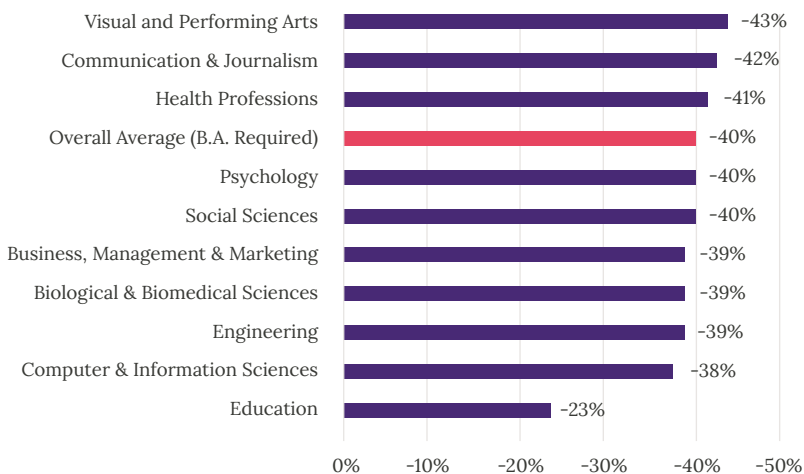


Source: Matthew Bidwell, Wharton School

Figure 4.

In This Economy, Major Matters

Average percentage change in job postings requiring a B.A., March-May 2020.



Source: Burning Glass Technologies

seems to be accelerating this phenomenon further.

In a normal year for graduating students, the job outlook is highly dependent on a variety of factors, including academic major. The same is true in a pandemic economy. While job postings have fallen across all majors, they have dropped the most for graduates in the visual and performing arts, communication and journalism, and health professions; occupations for education majors declined the least (see Figure 4).

As employers settle in for a long period of economic uncertainty, however, it’s becoming clearer that the pandemic won’t impact just the employment prospects of college graduates in 2020. Thus, college leaders must prepare for the long haul as well. Institutions should begin now to ready their students for a job market that will be stuck in neutral for several years and a reshaped workforce that is likely to emerge later this decade. If they don’t, they put at risk how this cohort of graduates—who as young children recall how their own parents were impacted by the Great Recession—come to view their alma mater and higher education as whole.

“This recession won’t be just a repeat of the class of 2009, who entered the job market at the height of the Great Recession,” said Peter Cappelli, a professor at the University of Pennsylvania and director of the Center for Human Resources. “This pandemic will affect the employment outlook for several graduating classes, because it comes at a time when the workforce was already under pressure from artificial intelligence and automation.”

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# Four Approaches for Institutions to Consider

Whether or not the economic fallout from the coronavirus comes to define the world of work for generations of college graduates, higher education will still need to adjust its academic and co-curricular programming for those entering the workforce in the near term. We have identified four ways institutions can approach preparing students for good jobs in bad times. Colleges and universities shouldn't think they need to pick just one of these as a single pathway forward. Instead, these approaches (step quickly, step in, step around, and step up) are designed to stack on top of one another and overlap, allowing institutions to mix different models.

## 1. STEP QUICKLY

Colleges need to develop an immediate strategy for assisting those students graduating into this maelstrom. Our analysis has identified two categories of occupations suitable for those leaving college in the current economic climate.

One is what we call “target occupations.” These are professions across a range of majors with solid salaries and where employers continue to hire at the entry level.

They might not be the first jobs someone thinks of when a student asks, “what can I do with a major in X?” but these jobs do typically require a college degree. Target occupations include insurance agents, information security analysts, and clinical laboratory technologists (see Table 1, Page 8).

The second category of professions that colleges should help their students pivot toward right now are “lifeboat occupations.” These occupations typically require less than a bachelor's degree but allow employees to gain important skills they can use to transition later on to high-paying occupations that require a four-year degree (see Table 2, Page 9). Take, for example, a computer user support specialist. Although the job typically doesn't require a bachelor's degree and pays an annual salary of \$55,000, the skills developed in the role can eventually lead to a position as a network and computer system administrator making an average of \$87,000 yearly.

For both “target occupations” and “lifeboat occupations,” students need to have the right sets of skills to stand out and gain entry in a highly competitive market. Although students planning to graduate in the coming months have already

Colleges need to develop an immediate strategy for assisting those students graduating into this maelstrom.

committed to a major and a slate of courses, they still have time to acquire specific skills that can make them stand out in comparison to the competition. According to our analysis, for instance, job postings requiring knowledge of SaaS platforms (Software as a Service), such as Salesforce, Marketo, and thousands of others, have grown by nearly 500 percent in the last three years and command a 30 percent salary premium. Meanwhile, educators with a skill set that allows them to teach speakers of other languages can earn a 71 percent salary premium. Demand for such skills among employers has grown 131 percent.

Building a career requires more than just these “last mile” skills, however. Burning Glass has identified 14 of

Table 1.

# Target Occupations by Major

Major	Occupation	% Postings Requiring a B.A.	Entry-Level Postings in Occ by Major (12 months)	Avg. % Change Relative to Market: March-May*	Average Salary**
Biological and Biomedical Sciences	Medical and Clinical Laboratory Technologists	63%	5,749	+2%	\$49,370
	Biological Technicians	77%	2,337	+2%	\$42,140
	Chemists	100%	1,266	+15%	\$54,260
Business, Management and Marketing	Insurance Sales Agents	43%	18,957	+91%	\$46,900
	Personal Financial Advisors	76%	8,127	+12%	\$53,430
	Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	79%	6,181	+9%	\$65,260
Communication and Journalism	Reporters and Correspondents	90%	2,766	+7%	\$37,040
	Web Developers	95%	1,872	+13%	\$80,750
	Writers and Authors	92%	1,619	+3%	\$46,730
Computer and Information Sciences	Software Developers, Applications	94%	38,787	+5%	\$83,150
	Information Security Analysts	89%	8,767	+10%	\$83,470
	Network and Computer Systems Operators	77%	5,053	+3%	\$65,250
Education	Secondary School Teachers, Except Special and Career/Technical Education	96%	2,300	+36%	\$50,800
	Kindergarten Teachers, Except Special Education	90%	1,779	+14%	\$45,500
	Coaches and Scouts	68%	1,125	+10%	\$49,940
Engineering	Software Developers, Applications	94%	21,387	+5%	\$83,150
	Network and Computer Systems Operators	77%	1,701	+3%	\$65,250
	Information Security Analysts	89%	1,494	+10%	\$83,470
Health Professions	Medical and Clinical Laboratory Technologists	63%	2,358	+2%	\$49,370
	Coaches and Scouts	68%	1,064	+10%	\$49,940
	Social and Human Service Assistants	51%	1,002	+5%	\$41,030
Psychology	Property, Real Estate, and Community Association Managers	48%	1,408	+15%	\$44,740
	Training and Development Specialists	70%	1,988	+1%	\$51,630
	Social and Human Service Assistants	51%	2,890	+5%	\$41,030
Social Sciences	Insurance Sales Agents	43%	4,415	+91%	\$46,900
	Property, Real Estate, and Community Association Managers	48%	3,651	+15%	\$44,740
	Personal Financial Advisors	76%	1,651	+12%	\$53,430
Visual and Performing Arts	Web Developers	95%	1,872	+9%	\$80,750
	Software Developers, Applications	94%	1,800	+5%	\$83,150

\*Change is calculated as the absolute difference in percentage points between the decline in occupation postings and decline of overall bachelor's job market postings of -40%

\*\*Average salary for entry-level B.A.-required postings.



Table 2.

# Top 15 Lifeboat Occupations for College Graduates

Occupation	% Postings Requiring a B.A.	Entry-level Postings (Last 12 Months)	Available Postings March-May 2020	Avg. % Change Relative to Market: March-May*	# of States with Postings Increase	Average Salary (Entry-Level B.A.-Req)
Computer User Support Specialists	47%	66,868	77,234	+2%	2	\$51,410
Bookkeeping, Accounting and Auditing Clerks	41%	56,430	54,663	+1%	6	\$37,860
Loan Officers	50%	26,027	26,698	+17%	7	\$53,960
Real Estate Sales Agents	37%	25,787	40,412	+31%	25	\$47,130
Engineering Technicians, Except Drafters, All Other	31%	23,075	26,730	+10%	8	\$58,670
First-Line Supervisors of Mechanics, Installers, and Repairers	28%	22,848	35,706	+13%	6	\$57,050
Life, Physical, and Social Science Technicians, All Other	55%	12,591	14,009	+6%	17	\$51,160
Loan Interviewers and Clerks	20%	11,275	11,859	+27%	20	\$42,770
Insurance Claims and Policy Processing Clerks	30%	8,828	6,766	+1%	10	\$40,060
Residential Advisors	25%	8,005	8,251	+15%	18	\$35,350
Psychiatric Technician	16%	7,623	5,875	+13%	15	\$34,990
Private Detectives and Investigators	67%	4,588	5,578	+6%	12	\$47,650
Occupational Health and Safety Technicians	54%	2,155	2,706	-1%	17	\$53,200
Chemical Technician	62%	2,031	1,791	-1%	12	\$44,140
Legal Support Workers, All Other	56%	1,994	2,765	+21%	25	\$49,320

\*Change is calculated as the absolute difference in percentage points between the decline in occupation postings and decline of overall bachelor's job market postings of -40%

these “New Foundational Skills” (see Figure 5) that are in high demand both for digitally intensive jobs and the wider economy. These skills go beyond the popular conversation around so-called soft skills and 21st century skills to encompass a broader range of business, data, and technical skills that are key to unlocking millions of jobs across domains. While each skill is valuable on its own, students who develop multiple competencies across skill

groups earn significantly more and experience increased job mobility and advancement.

Once students have acquired these skills, institutions would be wise to help students translate them to the work environment. Students are adept at telling potential employers what they *did* in college—the courses they took and the internships they completed—but not what *skills* they learned. Even more important

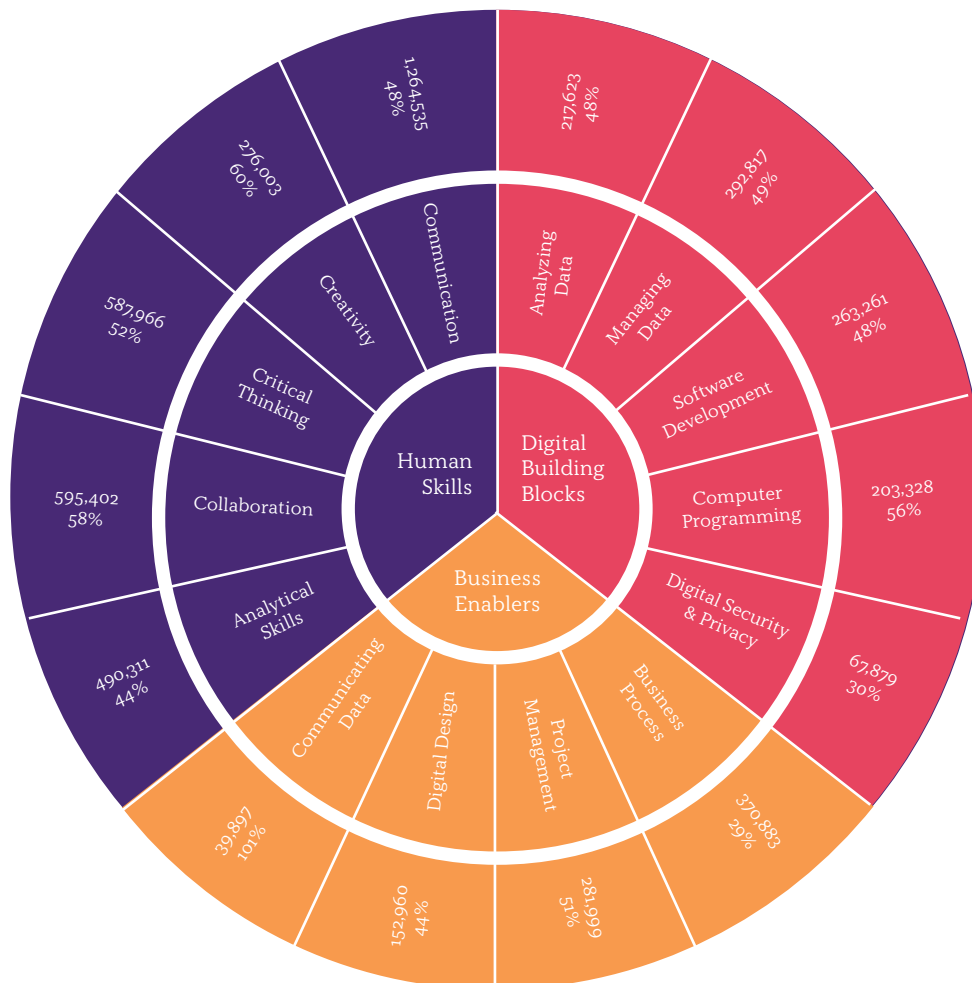
for students to demonstrate to employers is how those skills might apply in a very different context from where they originally learned them. “

“Knowledge transfer is what gets graduates hired,” said Susan Ambrose, senior vice provost for educational innovation at Northeastern University and author of *How Learning Works: Seven Research-Based Principles for Smart Teaching*.

Figure 5.

14 Foundational Skills Key for All Graduates

These 14 skills are in high demand both for digitally intensive jobs and the wider economy. The outer ring shows the total open entry-level postings (March 2019–Feb. 2020) and the growth in number of postings (2017–2019).



## 2. STEP IN

Stepping quickly will get institutions and their graduates through the immediate economic impact of Covid-19. But being ready for the post-pandemic economy means colleges and universities need to step in aggressively to plan for the academic programs that will be the lifeblood of their institution and drive enrollment for the long term.

A comprehensive examination of the economics and market potential of academic programs is essential right now. A program audit or prioritization should account for each unit's revenues and expenses and gauge student demand and outcomes, including relevance in an evolving labor market.

Planning in this environment when so much is unclear with the virus is difficult. While historical data on enrollment and career opportunities can provide important context, colleges also need to analyze the more transformative trends that have emerged during this crisis. Studying the shifting habits of consumers and businesses in recent months as well as hiring reports can provide important clues to institutions about emerging career fields—and therefore of the kinds of programs that institutions need to focus on to align with the interests of future prospective students and to assure their post-graduate success.

We imagine four distinct economies coming from the crisis that will provide opportunities for institutions to step in to meet learners:

### **The Readiness Economy**

The pandemic has exposed how ill-prepared governments and the private sector were for a global disruption. To get ready for the next crisis, whether it's a public health emergency or an environmental one, will require investments in health care, biotech, cybersecurity, green technology, and infrastructure. This, in turn, will spur demand for graduates with the skills to address these vulnerabilities. Biotech hiring, for example, is already up 36 percent from January to August alone. Similarly, CVS Health, for instance, has announced it's embarking on the most ambitious hiring drive in the company's history, with plans to fill 50,000 jobs in the U.S.

### **The Remote Economy**

Remote work may be the most influential legacy of the pandemic, according to the Conference Board, a nonpartisan think tank. Eight in 10 business executives expect that the number of employees working

primarily from home will increase post-pandemic. The result will be a growing reliance on the data, software, and infrastructure that powers working from anywhere. That's why in the middle of the pandemic, global job postings for video conference platform Zoom nearly doubled and openings at Slack, which makes corporate chat software, jumped 50 percent. Students in fields like network engineering, distributed systems, cloud and IoT technologies, or e-commerce marketing may enjoy strong prospects for many years to come.

### **The Logistics Economy**

Global supply chains that were interrupted by the virus are already being reimagined. Manufacturers are making plans to move assembly lines from far-off countries closer to consumers and speed up the introduction of advanced manufacturing technology. In addition, these changes will require



new types of logistical support, which is one reason why FedEx Ground and FedEx Logistics revealed plans in July 2020 to hire 35,000 new workers in the next five years.

### **The Automated Economy**

An often-cited study before the onset of the virus by Oxford University predicted that half of American jobs would disappear in the next decade because of advancing automation. The pandemic is likely to only accelerate the adoption of artificial intelligence, especially in knowledge work—and that may drive demand for graduates in fields like autonomous systems and advanced manufacturing. At the same time, the advent of the Automated Economy will require colleges and universities to help students complement technology rather than compete with it by focusing on the 14 foundational skills we discussed earlier.

No matter what, the traditional buffet of academic programs, the breadth of which once signaled an institution's status and ambitions, will no longer serve its needs or that of learners. Academic programs need to be efficient and relevant. Colleges that offer the right mix to serve the four emerging economies post-Covid will shore up their financial sustainability, while ensuring students' career opportunities. In many ways, institutions already have the mix of courses or programs in their catalog; they might just need to reorganize them to match growth areas.

### **3. STEP AROUND**

Higher education institutions often mimic each other in structure, strategy, and branding. But the fiscal realities on the horizon will require greater differentiation in the marketplace for institutions to thrive. Colleges will need to step around the herd of institutions they've been part of for much of their history to carve a more distinctive path to what's next for their students.

*In the future, we need to think of learning as continual rather than episodic.*

If the impact of the coronavirus has proven anything in higher education it is that in the face of adversity institutions can be a lot more flexible in the academic calendar, in how they deliver courses, and how they award credits. Academic programs in the future should be designed to better serve different segments of students.

A sector that will only grow in an era of rising unemployment is the adult learner. There are nearly 9 million adults who have earned some sort of credential short of a degree and another 25 million who went to college but never finished. Add to that the 66 million college graduates in the US labor force, many of whom are searching for new skills and knowledge but don't want to enroll

in expensive and time-consuming master's programs.

One approach to stepping around is for institutions to create new kinds of micro-credentials that stack on top of one another, enabling colleges and universities to broaden the community of learners they serve. In the future, we need to think of learning as continual rather than episodic—not as something we do only when we stop doing something else. These short-term credentials should provide specific skills as well as foundational skills, such as problem solving, creativity, and critical thinking.

A Compensation Analyst who learns budgeting and financial accounting can step into a job as a Financial Analyst earning \$19,000 per year more. Many schools already teach the right classes, but they don't package them together in such a way as to serve the audience of those interested in this transition. Nor are such transitions rare. A model of skill adjacency that Burning Glass first developed for the World Economic Forum has identified learning paths to upward mobility from virtually every career. Take, for instance, Assistant Retail Store Managers—typically a sub-BA role. By building skills in areas like profit targets, planning, employee onboarding, and key performance indicators, they can move up to Sales Manager jobs and enjoy an \$11,000 boost in pay.

Des Moines Area Community College offers a compelling example of an institution that has stepped around the herd offering only traditional associate degrees. It has expanded

Table 3.

# Sample Recovery Jobs and Skills

Occupation	Average Salary	2019 Postings	Essential Skills
<b>Readiness Economy</b>			
Cyber/Information Security Engineer/Analyst	\$97,842	28,525	Information Security Information Systems Linux
Risk Manager/Analyst	\$97,544	1,567	Threat Analysis Information Technology Industry Knowledge Internal Auditing
<b>Automated Economy</b>			
Network Engineer/Architect	\$116,224	9,524	Kubernetes Artificial Intelligence Internet of Things (IoT)
UI / UX Designer/Developer	\$98,749	16,680	React Javascript Design Thinking Robotics
<b>Logistics Economy</b>			
Supply Chain/Logistics Manager	\$66,987	2,622	Data Management Warehouse Management Systems Data Analysis
Business/Management Analyst	\$73,357	2,970	Supply Chain Improvement Tableau Python
<b>Remote Economy</b>			
Data Scientist	\$115,907	2,908	Deep Learning Python Natural Language Processing
Software Developer / Engineer	\$108,515	14,892	AWS CloudFormation Ansible Oracle Cloud

its noncredit programs to get new classes up and running more quickly than in the past and teach students just enough to start a career. The goal isn't to give students everything they need to know for a job, but enough to get them started with a local employer. Taking just a few such classes is both less expensive and more manageable than pursuing the legacy two-year degree.

### 4. STEP UP

When summer internships began to disappear in the spring of 2020 because of the pandemic's lockdown, Denison University in Ohio decided to step up, and with the help of its alumni and the corporate community, created a five-week online summer business course that culminated with a one-week internship. One third of the university's 2,300 undergraduates enrolled.

If experience counts in this job market for those with newly minted degrees, colleges need to step up by infusing their curriculum with more job experience through internships, co-ops, and job shadowing. It used to be that such experiential learning was often place-based and capacity constrained. Covid-19 has demonstrated, however, that many of those job-training experiences can take place virtually. One survey by Handshake found that 60 percent of employers pivoted their in-person internships to virtual ones in the summer of 2020.

That said, "colleges shouldn't outsource the development of foundational skills to employers," said Adam Weinberg, Denison's president. "If we say creativity and problem solving are part and parcel

of a college education, so too should things like project management and analyzing data."

In his seven years as president of Denison, Weinberg has put in place an intentional set of programs to ease the transition of students to the workforce. He pushed for the development of OnBoard, a suite of 60 self-paced, noncredit, online micro-courses in everything from creating professional documents to effective communications.

Denison has also fast-tracked the development of new majors in data analytics and global commerce to ride the wave of job growth in those areas.

But where colleges and universities really need to step up in their academic and co-curricular programming is in assisting learners throughout their career to both reskill and upskill. Knowledge is churning at an accelerating rate in the workforce and skills must be constantly renewed. Graduate degrees and credentials signifying mastery of specific skills that would have propelled past generations through careers spanning 40 years or more are becoming less important than acquiring skills that grow over decades.

The Pew Research Center has found that 87 percent of workers believe it will be essential for them to get training and develop new skills throughout their work life to stay current in the workplace. Those individuals can't wait for some arbitrary date on a calendar to begin a new degree program nor can they travel to a campus to take a course in the middle of the workday. Increasingly, higher education will need to follow the



entertainment industry in meeting the needs of consumers: on demand and always on. Those institutions that can transform themselves accordingly will position themselves for tremendous growth in both good times and bad.

Covid-19 has already reshaped the job market for years to come. Around the world, we've seen a dramatic increase in remote work as well as entire sectors of the economy losing significant shares of their workforces perhaps forever. Higher education will be a critical component in getting the economy up and running. But not all institutions will play an equal role. For colleges to ready their graduates for what's next, they'll need to be more agile, adaptive, and imaginative. ■

Table 4.

# Appendix: Distinguishing Skills for Targeted Occupations

Targeted Occupations	Relevant Majors	Distinguishing/ Specialized Skill	Growth Rate*	Salary Premium
Biological Technicians	Biological and Biomedical Sciences	Transfection	52%	15%
		Virology	50%	18%
		CRISPR	34%	10%
Chemists	Biological and Biomedical Sciences	Toxicology	90%	17%
		Biologics	55%	11%
		Liquid Chromatography	30%	2%
Coaches and Scouts	Education, Health Professions, Psychology	Budgeting	3%	8%
		Concussion Diagnosis/ Treatment	-9%	29%
Information Security Analysts	Computer and Information Sciences, Engineering	NIST Security Standards	100%	7%
		Cybersecurity Assessment	55%	19%
		Nessus	14%	14%
Insurance Sales Agents	Business, Management and Marketing, Social Sciences	Marketing	909%	20%
		Sales System	-18%	25%
		Annuities	-51%	0%
Kindergarten Teachers, Except Special Education	Education	Teaching Speakers of Other Languages	131%	71%
		Lesson Planning	25%	5%
		Learning Styles	2%	1%
Medical and Clinical Laboratory Technologists	Biological and Biomedical Sciences, Health Professions	Immunology	63%	1%
		Clinical Pathology	33%	7%
		Microbiology	28%	4%
Network and Computer Systems Administrators	Computer and Information Sciences, Engineering	Systems Engineering	65%	21%
		Python	35%	25%
		Vmware Server	6%	30%
Personal Financial Advisors	Business, Management and Marketing, Social Sciences	Due Diligence	657%	12%
		Wealth Management	122%	16%
		Asset Allocation Theory	82%	11%

\*Growth Rate is calculated as the change in 2017 and 2019 recall rates for entry-level postings

Table 4. (cont.)

## Appendix: Distinguishing Skills for Targeted Occupations

Targeted Occupations	Relevant Majors	Distinguishing/ Specialized Skill	Growth Rate*	Salary Premium
Property, Real Estate, and Community Association Managers	Psychology, Social Sciences	Legal Documentation	16%	18%
		Accounting	9%	1%
		Variance Reporting	-47%	16%
Reporters and Correspondents	Communication and Journalism	Content Management	121%	8%
		Electronic News Production System (ENPS)	37%	3%
		Photojournalism	31%	6%
Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	Business, Management and Marketing	Software as a Service (SaaS)	486%	30%
		Articulating Value Propositions	157%	8%
		Salesforce	98%	6%
Social and Human Service Assistants	Health Professions, Psychology	Crisis Intervention	44%	6%
		Criminal Justice	15%	1%
		Social Work	-6%	25%
Software Developers, Applications	Computer and Information Sciences, Engineering, Visual and Performing Arts	Spring Boot	152%	13%
		React Javascript	115%	11%
		DevOps	34%	15%
Training and Development Specialists	Psychology	Content Development	70%	12%
		Curriculum Development	62%	11%
		Lesson Planning	57%	4%
Web Developers	Communication and Journalism, Visual and Performing Arts	Flask	596%	7%
		Swift	336%	6%
		Cloud Computing	268%	6%
Writers and Authors	Communications and Journalism	Digital Marketing	11%	2%
		Copywriting	8%	9%
		Content Development	8%	6%

\*Growth Rate is calculated as the change in 2017 and 2019 recall rates for entry-level postings



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## Endnotes

<sup>1</sup> David Yaffe-Bellany and Jaclyn Peiser, “For the Class of 2020, a Job-Eating Virus Recalls the Great Recession,” *The New York Times*, March 27, 2020.

<sup>2</sup> Mroz, Thomas and Timothy H. Savage. “The Long-Term Effects of Youth Unemployment.” *The Journal of Human Resources* Spring 2006 vol. XLI no. 2 259-293; Schwandt, Hannes and Till von Wachter. “Socioeconomic Decline and Death: Midlife Impacts of Graduating in a Recession.” NBER, October 2019.

<sup>3</sup> Rothstein, Jesse. “The Lost Generation? Scarring after the Great Recession.” NBER, May 2019.

<sup>4</sup> Abigail Hess, “New college grads are having their job offers rescinded—now they’re in ‘survival mode,’” *CNBC*, May 22, 2020.

<sup>5</sup> Melissa Repko, “CVS Health looking to fill 50,000 jobs to meet demand,” *CNBC*, March 23, 2020.

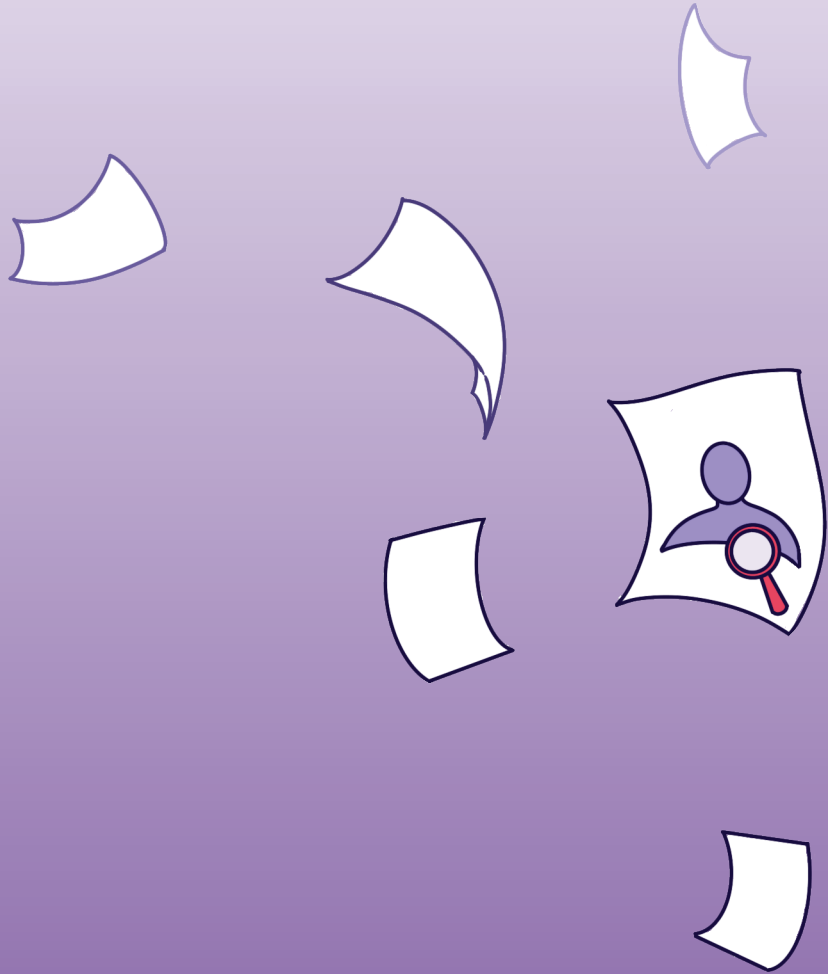
<sup>6</sup> Alison Griswold, “The companies with jobs hiring during the coronavirus crisis,” *Quartz*, March 27, 2020.

<sup>7</sup> John Klyce, “FedEx Ground hires thousands to meet e-commerce demand,” *Memphis Business Journal*, July 8, 2020.

## About the Authors

**Jeffrey Selingo** is an author of four books on higher education, the latest, *Who Gets In and Why: A Year Inside College Admissions* (2020). You can find out more about him at [jeffselingo.com](http://jeffselingo.com).

**Matt Sigelman** is CEO of Burning Glass Technologies, a leading labor market analytics firm.



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