

Building Tomorrow's Workforce Today: Twin Proposals for the Future of Learning, Opportunity, and Work

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MISSION STATEMENT

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We believe that today's increasingly competitive global economy demands public policy ideas commensurate with the challenges of the 21st Century. The Project's economic strategy reflects a judgment that long-term prosperity is best achieved by fostering economic growth and broad participation in that growth, by enhancing individual economic security, and by embracing a role for effective government in making needed public investments.

Our strategy calls for combining public investment, a secure social safety net, and fiscal discipline. In that framework, the Project puts forward innovative proposals from leading economic thinkers — based on credible evidence and experience, not ideology or doctrine — to introduce new and effective policy options into the national debate.

The Project is named after Alexander Hamilton, the nation's first Treasury Secretary, who laid the foundation for the modern American economy. Hamilton stood for sound fiscal policy, believed that broad-based opportunity for advancement would drive American economic growth, and recognized that “prudent aids and encouragements on the part of government” are necessary to enhance and guide market forces. The guiding principles of the Project remain consistent with these views.





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This policy proposal is a proposal from the author(s). As emphasized in The Hamilton Project's original strategy paper, the Project was designed in part to provide a forum for leading thinkers across the nation to put forward innovative and potentially important economic policy ideas that share the Project's broad goals of promoting economic growth, broad-based participation in growth, and economic security. The author(s) are invited to express their own ideas in policy papers, whether or not the Project's staff or advisory council agrees with the specific proposals. This policy paper is offered in that spirit.

BROOKINGS

Abstract

The COVID-19 pandemic has brought new urgency to chronic and interrelated educational challenges: the need to expand and equalize postsecondary access, reduce the sector's reliance on costly in-person instruction, and develop a cumulative science of adult learning. Current federal government college funding programs do not encourage schools to be cost-efficient or to build toward the future needs of the U.S. workforce, let alone respond to the acute learning needs brought about by the pandemic. Yet U.S. higher education is an intrinsically adaptive ecosystem, rich with instructional and scientific talent; with the right incentives the ecosystem could quickly produce the flexible, affordable, and effective learning opportunities the nation needs.

We propose twin federal government initiatives to incentivize innovation in instructional delivery throughout the national postsecondary ecology, to bridge the divide between academia and the workforce system, and to accrete a cumulative science of adult learning. Under the first initiative, the federal government issues Learning Opportunity Credits (LOCs) to all U.S. adults who are either unemployed or who receive the Earned Income Tax Credit (EITC). LOCs will promote ongoing workforce training as well as the expansion of high-quality hybrid learning opportunities. Under the second initiative, the federal government establishes a national project on the Future of Learning, Opportunity, and Work (FLOW), a distributed collaboration between existing federal agencies and a network of competitively selected U.S. universities and their partners. FLOW will accumulate knowledge and inform policy on adult learning to serve the national interest moving forward. Packaged as dual initiatives and linked through data sharing and interoperability protocols, LOCs and FLOW are joint ventures.

Table of Contents

ABSTRACT	2
INTRODUCTION	4
BACKGROUND	6
THE CHALLENGES	12
THE PROPOSALS	15
QUESTIONS AND CONCERNS	18
CONCLUSION	19
AUTHOR AND ACKNOWLEDGMENTS	20
ENDNOTES	21
REFERENCES	22

Introduction

The COVID-19 pandemic produced a multidimensional crisis in higher education. Within the space of a few months in the spring of 2020, colleges and universities reconfigured daily academic life for millions of students and faculty, obliging essentially everyone to devise remote alternatives to routines long established in seminar rooms and lecture halls. Despite spectacular and costly efforts by administrators to make college campuses reasonably safe places for face-to-face interactions, nobody knows when or even if in-person academic programming will return to its pre-COVID-19 normal. Regardless, the pandemic is wreaking havoc on a high-tuition, residency-dependent financial model long regarded as the hallmark of educational excellence in the United States. Despite the facts that the majority of even full-time college students do not reside on campus (College Board 2018) and that a growing but still minority of academic credits are being earned online (National Center for Education Statistics [NCES] 2020), many schools remain committed to a costly presumption that full-time enrollment in residential institutions provides the optimal learning environment.

It is a truism that crises bring opportunities for innovation, yet U.S. higher education has proven to be especially adept at quickly and creatively evolving to serve national needs in troubled times. Whether to mobilize, organize, and train military personnel for U.S. entry into World War II; to reward and reabsorb returning veterans; or to sustain technological supremacy during the 20th-century cold war, the U.S. postsecondary ecology has intrinsic nimbleness, flexibility, and traditions of national service that are globally exceptional civic assets (Cox 2020; Labaree 2017). Unfortunately, those assets have been systematically muted in recent decades by current federal government programs for financing higher education, in which schools are incentivized to compete for young adult students whose families are willing to pay high tuition and room-and-board fees, rather than compete for adult learners of modest socioeconomic means (Armstrong and Hamilton 2013; Clotfelter 2017; Deil-Amen 2015; Hoxby 2009). These same federal programs have precipitated a segregation between policymaking for higher education and labor force development, and lopsided fiscal provision in which workforce development and lifelong learning are, at best, second-tier priorities.

Americans have long invested their own resources in pursuit of higher education to enable social mobility for themselves and their children. Government patronage of higher education has been politically popular in no small measure because a broad plurality of taxpayers have had faith in education as a vehicle for achieving better lives. This faith has frayed in recent years in the wake of skyrocketing indebtedness from student loans (Zaloom 2019). Advocates of any new government efforts to support higher education in the wake of current crises must recognize these two sides of public sentiment: on the one hand, a tradition of self-interested trust and optimism in the promise of higher education, but, on the other, skepticism that the current system is generating adequate value. Advocates must also recognize that access to postsecondary learning opportunities remains profoundly unequal in U.S. society, disproportionately available to the white and the wealthy and, increasingly over time, a means of hoarding rather than sharing privilege (Carnevale, Schmidt, and Strohl 2020).

We propose leveraging the resources of the federal government in novel programs specifically designed to enhance the accessibility, affordability, flexibility, and probity of colleges and universities. Our two proposals explicitly encourage the nation's 4,000 degree-granting postsecondary institutions to adapt creatively in order to serve those who need novel learning opportunities the most: newly unemployed adults, those who have obtained some postsecondary education but who do not yet have portable credentials, and workers whose current livelihoods are threatened by the continued pandemic, economic restructuring, automation, or some combination of these forces. Because all of these groups disproportionately include Black and Latinx Americans, our proposals contribute to the progress of racial equity and justice in the provision of postsecondary opportunity.

The twin initiatives described in this paper simultaneously respond to the current crises, invest in the long-term expansion of postsecondary access, and encourage measurable improvement in lifelong learning opportunities. Under the first initiative, the federal government issues Learning Opportunity Credits (LOCs) to U.S. adults who have been unemployed through no fault of their own and who (1) are currently eligible to receive unemployment insurance

payments, (2) have exhausted their unemployment insurance and extended benefits within the past two years, or (3) who are eligible for the Earned Income Tax (EITC) or who have received EITC within the past two years. LOCs will promote postsecondary equity, seed human capital formation, and encourage innovation in the development of hybrid adult learning offerings. As a condition of LOC reimbursement, at least 50 percent of each offering will comprise digital learning experiences. Under the second initiative, the federal government establishes a national project on the Future of Learning, Opportunity, and Work (FLOW), a distributed collaboration between existing federal agencies and a network of competitively selected U.S. universities and their partners, which will accumulate knowledge and inform policy on adult learning to serve the national interest moving forward. Packaged as dual initiatives and linked through data sharing and interoperability protocols, LOCs and FLOW are joint ventures.

Together, these two proposals meet acute needs for accessible learning opportunities in the wake of a global pandemic, while also creating pipelines for ongoing development of instructional programs and rigorous science for their

continuous improvement. The proposals are cost-effective because they address multiple problems simultaneously: the chronic need to reduce the cost of postsecondary delivery, the immediate need of adult workers to retool in the wake of the pandemic and its economic consequences, the future need for both people and schools to adapt flexibly to extraordinarily dynamic workplaces, and the imperative to invest in necessary educational infrastructure to maintain U.S. global preeminence in postsecondary education. They are self-correcting because contributions to assessment and research are requirements of program participation. And they are politically feasible. We propose that LOCs be explicitly defined from their inception as *educational* benefits, and that in the long term they become *universal* for all adults. These are features of government social provisions—Social Security, free K–12 schooling, and college grant and loan programs, for example—that, historically, Americans have enthusiastically embraced (Mettler 2011). The design of the two proposals also invites enthusiasm from leaders and opinion-makers within the postsecondary sector itself, because the programs neither compete with nor replace existing federal funding for higher education, while creating fresh revenue streams to support instruction and research.

Background

ECONOMIC RESTRUCTURING, AUTOMATION AND UNEVEN POSTSECONDARY CHANGE

The massive expansion of access to four- and two-year college credentials in the middle of the 20th century was a heroic success in national human-capital formation. That expansion helped foster a large and prosperous American middle class. During the 1950s and 1960s, young people could presume steady, well-compensated, white-collar employment if they were able to complete a four-year degree. Meanwhile, many young adults without college educations could avail themselves of fully benefitted, union-protected jobs in the nation's robust manufacturing sectors.

Of course, this erstwhile golden age of postwar America had profound limitations. It was stratified and even exclusionary, enabling social mobility and job security much more for white than for Black and Latinx Americans (Fischer and Hout 2006). And it was short-lived. By the end of the 1970s, the transnationalization of industrial manufacturing began to diminish substantially the ranks of union-protected manufacturing jobs (Braverman 1998), while attendant corporate restructuring eliminated entire ranks of management positions and rendered white-collar work increasingly precarious (Fligstein 2002).

Since that time, epochal changes brought about by the ongoing computational revolution have abetted the precarity of middle-income Americans and brought urgent need for more equitable postsecondary access and quality learning opportunities across the life course. The first such change is the growth of service-oriented and knowledge-based jobs that have made possession of the high-level literacy, numeracy, critical-thinking, and interactive skills associated with postsecondary education only more important for Americans to obtain (Brint 2018). Second, what counts as workforce-relevant skills has been changing with the continual evolution of digital platforms for managing flows of money, people, goods, and information (Merisotis 2020). Third, constant dynamism in almost every field of human activity has come to require that virtually all workers learn to assume the flexibility and growth mindsets that enable them to transition between jobs, careers, and business sectors (Brynjolfsson and McAfee 2014). Finally, the American workforce is now more culturally and ethnoracially diverse than ever, which

creates ongoing challenges and opportunities for negotiating equitable and inclusive workplaces (Burns, Barton, and Kerby 2012).

Yet for all this change, the basic rhythms and demographics of many conventional colleges and universities have remained from the post-World War II era. Flagship programs at the nation's most distinguished universities are organized for full-time enrollment in a September-to-June calendar. Admissions-selective four-year colleges and universities disproportionately serve the white and the affluent (Grusky, Hall, and Markus 2019). Admissions to and residential requirements at such schools systematically create formidable barriers for most of those without the advantage of a college-preparatory high school curriculum, young adults who are parents, those who are older than 22 years of age, and those who are unable or unwilling to move out of their households of origin.

A spectacularly diverse for-profit sector has rapidly arisen to meet the educational needs of the millions of Americans poorly served by legacy schools and delivery models (Kirst and Scott 2017). While this entrepreneurial activity is testament to the dynamism of American capitalism, it also has produced educational services that vary widely in cost, learning outcomes, and employment gains for those who enroll in them. Overall, this for-profit sector has a damning record of irresponsible business behavior, with many documented cases of deceptive advertising, predatory recruitment practices, and outright fraud (Cottom 2017; Eaton 2020; Mettler 2014). Yet too many legacy providers with stronger reputations and track records (with important exceptions, discussed below) have remained aloof from the needs of young people with weak precollegiate academic records and from the needs of adult learners, choosing instead to focus their energies on the coveted few high school graduates each year who bring high grades and test scores and whose families—whether domestic or international—are willing to pay high tuition (Hamilton and Neilsen forthcoming).

The federal government has the normative and fiscal influence to change this state of affairs. Widespread calls for decisive government response to the COVID-19 pandemic create a historic opportunity for ambitious federal policy that could

change financial incentives for colleges and universities in ways that promote access, affordability, and occupational relevance for the adults who need postsecondary learning opportunities most.

THE CURRENT CRISIS

The COVID-19 pandemic is creating extraordinary demands for workforce retraining: tens of millions of adult workers have lost employment while seismic changes in the nature of work and the structure of the economy unfold around them. By the end of May 2020, U.S. jobless claims during the pandemic had passed 40 million. One-third of American workers faced with job loss report an interest in changing their field of work, but only 44 percent report they have access to the education and training they want (Strada 2020). Simply put, the nation needs greatly expanded adult learning opportunities, for more people, at a cost that is lower than it was before the pandemic.

Unfortunately, those who might benefit the most from postsecondary learning opportunities—the newly unemployed—face real difficulty accessing current college grant and loan programs, in part because the bureaucracies that disburse college aid are disarticulated from those that distribute unemployment benefits (Turner 2017). Public two- and four-year colleges and universities have a mixed record in terms of providing support for retraining of displaced workers. For example, a recent rigorous empirical study of displaced workers in Ohio found, consistent with national research, that four years after job loss 15 percent of displaced workers were still unemployed, and that those who *were* employed had experienced a 25 percent loss of income. Displaced workers who had enrolled in coursework at public colleges and universities, however, had significantly improved employment prospects. Unfortunately, only 10 percent had taken advantage of these educational opportunities. More troubling still, the authors' causal estimate of the effects of job loss on displaced workers' enrollment in public colleges and universities was considerably lower: only about 1 percent of displaced workers, primarily drawn from the manufacturing sector, were enrolling (Minaya, Moore, and Scott-Clayton 2020).

Concurrent with providing the impetus for increased support for workforce (re)training, the pandemic has produced a multidimensional crisis in higher education more broadly, and is challenging the fundamental character of academic instruction, institutional finance, and the presumed ideal platforms and formats of college learning. Almost every college and university moved to remote instruction in the spring of 2020, irrespective of institutional prestige, residential requirements, admissions selectivity, or price point. That move has not gone well. The elite residential schools that had long eschewed online instruction were

among the least prepared instructionally. Their faculty, administrators, and IT staff were forced to rely on a few off-the-shelf technologies (e.g., Zoom, Canvas), with faculty often having minimal or no training in online pedagogy (Arum and Stevens 2020). The results were predictable. Seventy-five percent of college presidents surveyed in March 2020 reported that they were concerned about the readiness of their school's faculty to teach online (Lederman 2020). The concern was warranted. At one large public research university, 80 percent of students surveyed in April 2020 reported worrying that the shift to online instruction would inhibit their academic progress (von Keyserlingk 2020). A second survey conducted at 10 large public research universities in late May found that 10 percent of students were considering not enrolling in classes in the fall of 2020; the top reason reported by 71 percent of domestic students for their plans not to reenroll was concern that classes would continue to be offered online (SERU Consortium 2020). A third survey at one of the largest public universities in the country found that 13 percent of students were planning to defer graduation, while 40 percent reported the loss of a job, internship, or job offer; students from lower-income backgrounds were 55 percent more likely to be planning to defer graduation (Aucejo et al. 2020).

Prior research has demonstrated that low-quality online instruction has disproportionately negative effects on students from disadvantaged economic backgrounds (Xu and Jaggars 2013). While it is too early to gauge the long-term consequences of the move to online instruction for students in the aggregate, there is little doubt that learners with the fewest material and financial resources (for example, those without in-home broadband access, those who are unhoused or marginally housed, those with weak academic preparation in high school) will suffer the most in terms of lower grades, unfinished coursework, and college exit before graduation.

The pandemic also has placed extraordinary financial pressures on colleges and universities. Residential schools are highly dependent on diverse revenue streams tied to site-based services: room and board fees for students, first, but also conferences, camps, athletic and cultural events, executive education programs, and parking fees. More subtly but nevertheless profoundly, residential schools justify their high tuition rates on the promise that full-time face-to-face instruction is superior to remote learning. The entire business model of residential higher education is predicated on the fact and costliness of physical copresence (Armstrong and Hamilton 2013).

Simply specifying the cost of individual campus-based services is itself a daunting challenge. College and university budgets are notoriously complex, with cross-subsidy of research, instruction, residential programming, fundraising, and capital investments common (Owen-Smith

2018). Accounting and budgeting in higher education are so byzantine that even one prominent defender of the status quo resorts to describing it as “a perfect mess” (Labaree 2017). Adding to the complexity is increasing financialization of academic assets. Public and private schools alike now routinely take on debt and contractual obligations, such as P3 student housing, tied to optimistic forecasts based on assumptions of stable or increasing enrollments (Eaton et al. 2016; Seltzer 2020). Costs of personnel, facilities, and debt servicing are largely fixed, with little margin for revenue disruptions of the magnitude schools are currently facing. The number of private nonprofit schools facing financial insolvency in coming months is likely to be in the hundreds (Carey 2020). While not facing comparable bankruptcy risk, public schools are likely to experience significantly reduced state funding in coming years in light of economic downturn, which will only compound the acute financial challenges they are weathering today (Oliff and Pontari 2020).

Federal responses and policy proposals to this multidimensional crisis have yet to recognize the need for structural change to ensure sustained postsecondary access, increased equity in educational opportunity, and enhanced workforce development keyed to the nation’s future economic needs. The higher education provision in the Coronavirus Aid, Relief, and Economic Security (CARES) Act, signed into law in March 2020, provided \$13.953 billion to colleges and universities, 90 percent of which was awarded through the Title IV distribution system on the basis of full-time enrollments (American Council of Education 2020). In the federal disbursement formula, low-income students eligible for Pell Grants were weighted three to one relative to those who were not Pell-eligible—reasonably, we believe, given how the pandemic has disproportionately impacted people of modest means. However, students whose instruction was delivered fully online were excluded from allocation calculations. This funding formula may have been warranted in the sense that instruction for fully online students was least impacted by the pandemic. It is nevertheless ironic that allocating relief on the basis of in-person enrollments categorically excluded those learners and institutions that have done the most to embrace the long-derided digital technologies on which every school is now relying.

Other nascent policy proposals to address current financial challenges facing students, colleges, and universities have been unimaginative, such as doubling the existing Pell Grant, providing direct funding to states for higher education services, and forgiving student loans (Murakami 2020).¹ These proposals in no way incentivize schools to adapt flexibly to either current circumstances or the future needs of American workers.

The stark picture we have painted is, admittedly, partial. We recognize the great flexibility, resilience, and commitment to national service that colleges and universities have exhibited over the course of U.S. history. We are encouraged and inspired by iconoclastic universities such as Arizona State, Georgia Tech, Southern New Hampshire, and Western Governors, and community colleges such as Rio Salado and Miami-Dade, that have embraced and improved low-cost online delivery and made quality postsecondary learning opportunities accessible to millions. There is no shortage of adaptive capacity in the U.S. academy. Unlocking that capacity in a time of crisis requires decisive federal leadership.

THE POLICY LANDSCAPE

Current federal higher education and workforce development programs were devised in the 1960s and early 1970s, an era in which state legislatures were generously subsidizing public higher education, when steady and well-compensated employment did not require college credentials, and when the mere possession of a college diploma provided considerable assurance of lifelong employability. Those conditions no longer obtain. Today the nation faces steadily declining state government subsidy for higher education and looming fiscal problems in the wake of the pandemic; a labor market in which some postsecondary education is a necessity, not a luxury; a competitive global capitalism that requires people to develop new knowledge and skills throughout their entire working lives; and growing calls for investment in affordable mechanisms for lifelong skill acquisition for U.S. workers.

None of these changes has yet been met with strategic postsecondary policy from Washington. The basic architecture of federal financial aid for colleges and universities has remained largely unchanged for 50 years. Devised in its current form under Title IV of the Higher Education Act in 1965 and fully institutionalized by 1972, the program has two primary pillars: direct grants to the lowest-income students, and loans, which are available to the vast majority of college aspirants.² In order to be eligible for either grants or loans, students must enroll in colleges or universities that meet minimal regulatory requirements. Eligibility entails a school being licensed or otherwise legally authorized to operate in the state in which its physical offices are located, being certified by the federal U.S. Department of Education (ED), and being *accredited*, which is a status secured through peer review by one of several nongovernmental programs recognized by ED (Hegji 2018). Title IV does not require ceilings on the amount of tuition and fees that schools may charge for academic credits and degrees, which has encouraged colleges and universities to prioritize the development of costly residential-based programs.

It is hard to overstate the importance of Title IV programs in shaping the entire U.S. postsecondary ecology. Two-thirds of full-time college students take advantage of at least one of these programs that, together with the Title IV work-study program, infuse approximately \$120 billion into college and university coffers each year (College Board n.d.a, n.d.b). Title IV literally makes mass higher education possible in the United States, putting college degrees within financial reach of everyday Americans and sustaining revenue streams for basic operations among the vast majority of the nation's colleges and universities. The programs are so financially important to schools that the terms of institutional eligibility for Title IV define the core operational model of U.S. higher education. While Title IV programs have expanded educational opportunities to students from diverse backgrounds, they have simultaneously incentivized colleges and universities to focus on serving students who can finance their education through these mechanisms, and diverted schools' attention from aggressively pursuing the less profitable and academically less prestigious programming associated with lifelong learning and workforce training.

In the second half of the 20th century, when the nation was benefitting from historic government–academic partnerships (see box 1), the United States led the world in the percentage of young adults receiving a college education. Yet as the decades since initial authorization of Title IV have passed, the United States has fallen behind many other advanced economies in both the rate of higher education expansion and in the proportion of young adults receiving postsecondary degrees. By 2018 nine countries had a higher percentage of individuals aged 25–34 with postsecondary degrees than the United States: Australia, Canada, Ireland, Japan, Lithuania, Luxembourg, South Korea, Switzerland, and the United Kingdom. In addition, over the past decade (2008–18), the U.S. rate of growth in postsecondary degree attainment lagged significantly behind the average rate of growth found in both European countries and in Organisation of Economic Co-operation and Development (OECD) member countries (OECD 2019). These challenges can be addressed both by providing additional educational opportunities to older adults in the labor market and by expanding both traditional and alternative pathways through college.

BOX 1:

Higher Education in the Nation's Service

The United States is a highly federated polity and Americans have long been skeptical of centralized big government social programs. Nevertheless, this country has a rich legacy of mobilizing government resources to meet great challenges: for example, winning wars, and putting millions to work during the Great Depression. It has met these challenges by relying on the extraordinarily rich and diversified national postsecondary ecology to provide instructional services and scientific acumen in times of crisis. By “postsecondary ecology,” we refer to a vibrant population of some 4,000 schools that simultaneously cooperate and compete with each other for students, funding, stable service niches, and prestige (Eaton et al. 2019; Kirst and Scott 2017; Kirst and Stevens 2015). Rather than building capacity directly, the federal government, often in partnership with state legislatures, has funded colleges and universities to build this capacity. In doing so, the nation has been able to take advantage of the competitive, market-like character of the ecology and the great affection Americans historically have had for their colleges and universities (Loss 2012).

Most Americans live within a day's drive of a major research university. More than 1,200 public community colleges are vital civic anchors of their towns and cities; and private colleges and technical institutes of myriad sizes and missions vie with their public counterparts for students, tuition, research funding, and prestige. This great variety has enabled schools to specifically recognize and serve particular constituencies: HBCUs, religiously affiliated schools, urban comprehensive universities, community colleges partnering with local industry, and specialized technical institutes all are important examples of the extraordinary adaptability of the U.S. postsecondary ecology. Alumni have reciprocated the positive contributions that particular schools have made to their lives and communities through tax exemptions, philanthropic contributions, and deference to academic institutions and experts generally. Such regard for the academy has made for a truly exceptional system of social provision and a higher education system that is the envy of the world.

As competitive and ambitious organizations, U.S. colleges and universities respond quickly to new streams of revenue. They have demonstrated great alacrity in adapting their operations to serve government needs. The signal historical example is the Servicemen's Readjustment Act of 1944, popularly known as the GI Bill, that accomplished the peaceful and prosperous absorption of returning World War II veterans into an uncertain postwar economy. One of the central pillars of the GI Bill was generous subsidy of college attendance, which ultimately sent 2 million people to

college (Mettler 2005). Colleges and universities responded to this influx by transforming themselves, in the space of a generation, from elite bastions for monks and the wealthy, into broadly accessible engines of social mobility (Stevens and Gebre-Medhin 2016). The success of the GI Bill created a policy legacy, with the federal government funding higher education to support scientific research for a global cold war as well as, ultimately, funding mass higher education for the general public (Graham 1984).

Indeed, in the middle of the 20th century colleges and universities became important partners with Washington, bringing federal resources to bear on problems faced by everyday Americans. An early expression of federal–academic partnership was the dispersal of New Deal relief programs. As they are today, Depression-era Americans were skeptical of welfare, but they typically were proud of their local colleges and universities, which Americans regarded as trusted neighbors; this was true, even, of those with strong antigovernment sentiments. Franklin Delano Roosevelt’s administration took advantage of this fealty, using colleges and their personnel to house, coordinate, and disseminate New Deal programs nationwide. As the political historian Christopher Loss has famously explained, the New Deal set in motion a tradition of federal–university collaboration that continued into the 1960s with the passage of the Higher Education Act, part of President Lyndon B. Johnson’s War on Poverty initiative, which provided tuition assistance to make college access an affordable ambition for the majority of Americans with a high school diploma (Loss 2012).

Herein also were the origins of the nation’s vibrant community colleges, which were true joint ventures between federal funding agencies and regional business and civic leaders, specifically purposed with serving the workforce needs of particular communities. These schools were at the forefront of efforts to expand educational opportunity to underserved populations (Brint and Karabel 1989; Dougherty 1994). There has been no similarly imaginative or ambitious deployment of federal largesse through higher education in the decades since.

The continuing COVID-19 pandemic creates a historic opportunity for the federal government to negotiate a new financial and civic contract with colleges and universities. The fiscal capacity of the federal government can be a powerful lever for eliciting more-affordable, more-accessible learning opportunities from the nation’s thousands of colleges and universities. As it was 75 years ago with the passage of the GI Bill, the time is ripe for the federal government to offer ambitious but disciplined incentives for schools to help Americans reenter the workforce and to sustain prosperity over the course of their adult lives.

At present, federal funding for higher education and workforce development are disbursed through separate agencies: ED and the Department of Labor. The direct cause of this disbursement model was the creation of the ED under the Carter administration, but it also reflects a political and cultural divide between those who historically have advocated on behalf of non-college-educated workers and those who have advocated a college-for-all approach to social mobility (Rosenbaum 2004). Federal funding and policy supporting colleges and universities—which Americans love—became segregated from funding and policy for workforce development. The latter came to be associated with welfare: “the most despised segment of social policy in America,” as one prominent labor historian has succinctly put it (Weir 1993, 10).

This segregation also has made the United States internationally distinctive in a rather unfortunate sense. We have invested heavily in an idealized conception of college as a general, but costly, ticket to economic security, but have put much less into targeted training programs that might create opportunities for particular people, at specific

times and places, to meet specific workforce needs. Relative to other advanced economies, U.S. higher education today is characterized by generic educational degrees and lower employer sensitivity to specific skills or qualifications (Shavit and Muller 1998).

History strongly suggests that novel federal funding mechanisms would oblige the postsecondary sector to redress this asymmetry of investment and opportunity. The United States has accreted a human capital system in which the federal government lends support to largely autonomous colleges and universities in exchange for national service: rewarding and reabsorbing veterans, mobilizing for war, and creating accessible mechanisms for social mobility. In each instance, the federal government created a novel funding mechanism (the GI Bill of 1944, the National Defense Education Act of 1958, and the Higher Education Act of 1965) that elicited competitive innovation among schools to receive those funds and meet the national need. The evolution of government–university partnership was extraordinarily generative of civic progress throughout the 20th century. It is time to do it again.

The national postsecondary ecology possesses extraordinary capacity to serve more adult learners and to accrete knowledge to improve learning opportunities, if incentives were designed to produce desired changes. The ecology has crucial assets that could be powerfully leveraged to build the future. First among those assets, we have thousands of schools characterized by intrinsic competition for students, financial support, and prestige. If the federal government were to create a program that made new sources of funding available under new terms, it would incent competitive innovation and collaborative partnerships to chase those funds. Second, we have a system that is both elite and accessible: a handful of research universities that lead in basic science, myriad other public and private schools serving particular constituencies and niches, and thousands of community colleges that are in or adjacent to most communities. Even as they compete, schools cooperate with each other if they are incentivized to do so. As management theories of cooperation suggest, incentives to competition and cooperation can be reciprocally complementary (Walley 2007). U.S. higher education exhibits serial examples of this phenomenon: the Morrill Land-Grant Acts of 1862 and 1890, which encouraged competitive founding of public universities on the western

frontier (Stevens and Gebre-Medhin 2016), coordinated but competitive big-science initiatives from World War II onward (Owen-Smith 2018), and ubiquitous intercollegiate athletics that require cooperation in order for competition to occur (Lifschitz, Sauder, and Stevens 2014).

Third, social science in a variety of fields has serially recognized that vibrant local economies are dependent on the active presence and engagement of postsecondary institutions (Moretti 2012; O'Mara 2015; Owen-Smith 2018; Saxenian 1996). The nation's 4,000 degree-granting colleges and universities are located all over the country, and are embedded in the communities of most Americans. Many schools know and serve particular constituencies or industries particularly well. Examples are the historically Black colleges and universities (HBCUs) and other predominantly minority-serving institutions, religiously affiliated colleges, schools of art and design, business and technical institutes, and rural agricultural and extension programs. They are respected, admired, and even loved by local business leaders, neighbors, and alumni. Our proposals create novel funding streams to sustain cherished civic institutions even while encouraging them to serve larger numbers of people in affordable, measurably effective ways.

The Challenges

From some angles it is hard to imagine ambitious federal education policy in the near term. Congressional gridlock, an ED criticized for organizational inertia, and chaotic federal response to the COVID-19 pandemic would not seem to bode well for forward-thinking government action. Yet national crises are precisely the times when politicians have been able to mobilize broad-based support for educational expansion. A federal response to the pandemic that explicitly tied relief to educational opportunity—just as prior federal programs tied both winning wars and rewarding veterans to college access in decades past—could elicit great popular and bipartisan enthusiasm.

Of course, any successful policy would need to be carefully designed in ways that anticipate myriad obstacles of at least five kinds: political, organizational, scientific and pedagogical, technical, and cultural. We briefly consider each kind in turn.

POLITICAL CHALLENGES

Tying federal relief for COVID-19 and its attendant economic crisis to broad-based opportunity creation would go far in generating approbation, but advocates of any successful policy must also contend with the political and fiscal realities of the postsecondary ecology itself. Most prominently, current Title IV funding provisions are the backbone of the nation's higher education system, with fierce defenders at almost every college and university and in myriad Washington lobbying organizations. To avoid controversy, fear, and outright resistance from this powerful political constituency, any new federal program must be designed as additive to Title IV funding.

Another political challenge entails navigating the tension between accountability and autonomy that shapes a great deal of policy debate within the postsecondary sector itself. On the one hand, newer and for-profit providers especially are chastised for their low graduation rates and employment returns; on the other hand, many legacy schools, especially private institutions with selective admissions, consistently and categorically resist additional universal reporting mechanisms, citing values of institutional autonomy and student privacy (McCann and Laitinen 2014). Any new federal funding streams will need to build in obligations for data reporting to enable measurement of quality and accountability over time, even

while addressing providers' reasonable aversion to burdensome reporting requirements.

ORGANIZATIONAL CHALLENGES

Federal workforce and federal higher education programming are almost entirely segregated from each other at present; this also tends to be true at the state and local levels. Colleges and universities are funded, governed, and staffed separately from workforce development agencies. This organizational and fiscal segregation has created separate organizational worlds, each with its own native vernaculars, career ladders, experts, and policy priorities. The segregation is not just categorical but also hierarchical. Higher education receives more direct federal funding than workforce policy by several orders of magnitude (Holzer 2015). Additionally, while we do not have systematic data to verify it, our combined decades of experience in the U.S. academy make clear to us that higher education policy enjoys many more advocates and experts among the elite professoriate than workforce policy—another function, we believe, of an asymmetry of prestige.

This segregation is precisely why a new federal program that blends the language, policy logics, and personnel of both sectors is essential. Merely adding federal dollars to either or both sides of the organizational divide will provide no incentive for collaboration and integration. By contrast, creating fresh sources of revenue for colleges and universities to build new learning opportunities keyed explicitly to the needs of the unemployed and underemployed would provide direct incentive for colleges and universities to talk, share knowledge, and collaborate with workforce-development organizations. Properly designed requirements or encouragements of academia-workforce collaborations might go even further to end problematic sectoral divisions and hierarchies.

SCIENTIFIC AND PEDAGOGICAL CHALLENGES

Andragogy—the method and practice of teaching adults—is a tiny research field in the United States at present. Almost all learning-science research is targeted toward children. This is a function of K–12 education's status as a right in the United States, but is also an outcome of circumscribed research funding. For nearly three decades, the National Science Foundation (NSF) has funded research on science, technology, engineering, and mathematics (STEM) education for young

people and college students; this investment has created a rich and growing body of applied science on children's learning and STEM instruction (NSF 2013). There has been no comparable investment in adult education, which is why postsecondary instruction has been serially characterized as “amateur hour” (Bass 1993; Zimmerman 2020). Adult learners face challenges of first unlearning and then relearning that younger learners do not (Darby and Sloutsky 2015). Additionally, the many life commitments of adults (e.g., work, child care, elder care) increase the opportunity costs associated with postsecondary education and preclude the same amount of face-to-face instruction that we now expect youth to receive.

There is no question that federal government investment seeds new domains of science and enables them to flourish (Brint 2018; Owen-Smith 2018). Social science research has devoted little attention to educational preparation and school-to-work transitions outside of a handful of elite professions (medicine, law, banking/finance, tech, academia). Government investment can change that. Consider the development of the Institute of Education Sciences (IES) as a domain for serious applied quantitative social science on primarily K–12 educational improvement. Founded in 2002, the IES has transformed the stature of K–12 education research and has gone far in establishing shared standards for research to inform education policy for that sector. Availability of government data sources is also a very powerful incentive for social scientists. We note, for example, important initiatives using federal administrative data at Harvard University (2020), Stanford University (n.d.), and the University of Michigan (n.d.) that serve as prior cases and partial examples.

Related challenges are pedagogical. While there has been great experimentation and innovation in online learning environments, and while the promise of digitally mediated instruction could finally and substantially bend the cost curve in postsecondary education (Bettinger and Loeb 2017; Bowen 2013), this form of educational delivery has a long way to go in terms of quality and consistency (e.g., McPherson and Bacow 2015). Especially for postsecondary learners without the benefit of strong K–12 preparation, exclusively online instructional experiences yield low measured learning and persistence relative to in-person instruction (Xu and Jaggars 2013). Yet it also is the case that carefully designed online programs can yield comparable learning outcomes to face-to-face delivery (Bowen et al. 2014; Tallent-Runnels et al. 2006). Hybrid models that combine the convenience of the web with meaningful interaction with instructors and among peers show particular promise (see Baum and McPherson 2019 and Protopsaltis and Baum 2019 for reviews).

A cautiously optimistic reading of research literature on online/hybrid learning models for adults to date suggests that these modes of delivery are promising, but that an understanding

of their affordances for particular learners, academic subjects, and intended purposes remains underdeveloped. We concur with our colleagues in the learning sciences (e.g., Reich 2020) that digital technologies will not fully transform or replace face-to-face instructional delivery—nor should they—but that they can nevertheless powerfully scale effective instructional practices and provide nuanced empirical feedback about what does and does not work for particular learners. Any federal program that encourages innovation in instructional delivery should include mechanisms for systematic observation and cumulative science in the interest of ongoing improvement.

TECHNICAL CHALLENGES

The pandemic has made clear the uneven availability of broadband internet access by race, class, and geography. Universal broadband access at high baselines of speed and reliability is essential infrastructure for any digitally mediated educational or other social service. Much as the federal government simultaneously invested in academic infrastructure and interstate highways in the 1950s, investment in higher education almost surely will require an ensemble of future-of-work policies that would simultaneously fund digital infrastructure and lifelong learning opportunities.³

Every manager knows that continuous improvement is well served by observation and measurement to assess what does and does not work, and why. Until very recently, teaching and learning had been poorly instrumented for observation and measurement at scale, and has required costly human classroom observers and standardized tests to gauge learning progress. Digital mediation of teaching and learning radically changes this circumstance because every interaction between lesson and learner is observed computationally and captured in the clickstream record (Waldrop 2013). Raw observations require a coherent data architecture to be made useful, such that any cumulative learning science built with digitally captured data requires investment in scientific infrastructure and the creation of shared standards for data specification, contribution, and interoperability. We are heartened that national conversations about what this infrastructure might look like are well under way.⁴ We also recognize that such standards and architectures are now easily assembled in a technical sense; coordination and politics are the challenges. Yet, here again, decisive federal action can create conditions for coordination across multiple parties that otherwise would be impossible.

CULTURAL CHALLENGES

A significant challenge to ambitious federal policy is the steep status hierarchy that has come to define the national postsecondary ecology. At the same time that it is vast and diverse, U.S. higher education is strongly stratified along parallel dimensions of prestige, student preparation, racial composition, and institutional wealth. Quite simply, the most prestigious institutions are also those educating the best-

prepared students at the highest levels of per capita expenditure, and they disproportionately serve white and Asian students. The reasons for this steep and consistent asymmetry of privilege are complex, but have much to do with steadily growing competition among institutions for full-paying students who have demonstrably strong academic records (see Clotfelter 2017 and Hoxby 2009 for synoptic analyses). The phenomenon has been abetted, however tragically, by the architecture of Title IV funding itself, which provides a great deal of federal tuition assistance in the form of guaranteed loans while placing no ceiling on tuition and fees that schools can charge aid recipients (Zaloom 2019).

A subtle but profound consequence is great lived-experience and cultural distance between the most academically selective, resource-rich, and research-intensive institutions and the vast majority of schools that serve the overwhelming majority of Americans: community colleges, comprehensive public universities, and for-profit schools (Deil-Amen 2015). Long

histories of racial segregation have perpetuated other divisions, with distinguished HBCUs and Latinx-serving institutions occupying worlds that are largely apart from historically white schools. This means that faculty and administrators in any one part of the ecology tend to have career trajectories, biographies, compensation levels, terms of employment, and students that are quite different from those of their counterparts in other sectors. Here is how the great variety of the U.S. postsecondary ecology—one of the country’s great assets—also makes intermural interest formation and political mobilization difficult.

Yet, here again, crisis creates opportunity. The COVID-19 pandemic and its economic sequelae have hardly impacted Americans equally, but they have impacted the education sector almost universally. As with wars and other calamities, there is now a window for creative leaders to define the current moment as a shared emergency, requiring an audacious and broadly inclusive educational response toward the promise of a shared, brighter future.

The Proposals

We propose two linked federal programs. Under the first program, the federal government creates Learning Opportunity Credits (LOCs), redeemable via registered providers, who are compensated on a per credit basis. Under the second program, the federal government establishes a national project, on the Future of Learning, Opportunity and Work (FLOW), to commission, integrate, and disseminate applied research for the ongoing improvement of educational programs and career strategies for working adults. The two programs are linked by a data-sharing protocol that obliges organizations remitting LOCs to make information from their relevant programs and participants available for scientific research. The programs are designed as a combination of short-term response to public health and economic crises, and as long-term investment in the future of adult learning for broad-based economic prosperity. They would be unveiled simultaneously and packaged and funded as joint ventures.

We recognize the urgency of providing novel learning opportunities for Americans at the earliest possible date. If the federal government is unable to move decisively on the adoption of a national initiative, we believe that initial pilots of these programs could be seeded by a consortium of philanthropies, a few charter providers, and relevant state and federal agencies.

PROPOSAL 1: LEARNING OPPORTUNITY CREDITS (LOCS)

As part of a pandemic-related economic stimulus package, the federal government issues a specified number of LOCs to an initial target population defined as U.S. adults aged 18 and older who have experienced job loss and who have received unemployment benefits during the preceding 24 months, as well as individuals who are currently eligible or qualified during the preceding 24 months for the EITC. Ideally, the program is expanded in future years to become a universal benefit extended to all U.S. residents 17 years of age and older, with individuals automatically receiving their allotment of LOCs on their 17th birthday. Expanding the initial program to a universal benefit for all adults, however, requires the generation of improved understanding of instructional costs, the affordances of digital learning, and the requirements for necessary learner support services to ensure greater inclusivity

and equity in postsecondary education. Initial investment in LOCs and FLOW over a five-year period will ensure the generation of necessary information to inform adequately any future program expansions and eligibility conditions.

LOCs would be redeemable for postsecondary coursework offered by accredited and registered learning organizations. By “accredited” we mean that participating schools submit to the same peer-review processes currently governing Title IV eligibility. By “registered” we mean that learning organizations are contractually obligated to provide access to data describing LOC learning opportunities and participants to entities involved in FLOW (described below). Given current concerns over the mixed track record of the use of public funds by for-profit providers, initial awards could be limited solely to public or nonprofit postsecondary institutions. In recent decades, public and nonprofit schools increasingly have contracted and partnered with for-profit firms in the provisioning of educational services; such arrangements would be allowable under the terms of this program. As the project progresses and accretes data on student engagement, learning, and employment outcomes as observed by FLOW, program eligibility might be redefined to include programs that meet specific performance criteria regardless of the tax status of the provider.

The initial value of an individual LOC award would be set by an expert panel as part of the policy development and congressional authorization process at a high enough level to induce institutional program participation. At the program’s inception, a LOC award would be designed to cover the costs of a traditional three- to four-credit college course. Over time, the expectation would be that LOCs would evolve to allow more flexible delivery of instruction that would not be tied to traditional metrics associated with seat time or credit hours, but instead would be tracked with measures of student engagement, learning, and employment value that are designed, developed, and/or informed by FLOW research.

Recipients may use LOCs to enroll in postsecondary courses at any participating learning organization of their choice. Successful completion of a LOC may confer credit that can be counted toward completion of associates, bachelors, and graduate degrees at accredited colleges and universities. Alternatively or additionally, participating

learning organizations may also confer stand-alone badges or certificates to LOC recipients after they have completed one or a combination of LOC offerings.

The program is specifically designed to encourage competition and collaborative partnerships among participating learning organizations for LOC enrollments. In the short term, LOC providers will be expected to attest to soliciting input from employer groups, professional associations, and/or employee unions regarding program offerings; in the longer term, relationships and collaborations catalyzed by FLOW will position it to facilitate ongoing alignment between learning offerings and workforce needs. Participating learning organizations are free to set their own LOC program admissions criteria, conditional on adherence to all relevant antidiscrimination law and statutory regulation. Competition among participating organizations will be encouraged and antitrust laws will be strictly enforced, even as participating organizations collaborate to share best practices.

Participating learning organizations are prohibited from charging any tuition or fees in excess of LOC reimbursement rates specified by their initial authorization and indexed to inflation thereafter. This provision eliminates the risk that recipients will be expected to pay additional costs when remitting LOCs with particular learning organizations, as is the case with the use of American Opportunity Tax Credits and Pell Grants. It also encourages participating learning organizations to move toward cost-efficient delivery. In order to spur educational innovation in instructional delivery and to generate observable data at scale to support improvement efforts and cumulative science, participating learning organizations will certify that at least 50 percent of learning interactions are conveyed via digital platforms.

Accredited and registered learning organizations are reimbursed for a LOC when a LOC recipient completes a learning opportunity by receiving a grade or score. *The grade or score need not be passing.* Participating learning organizations will be compensated for LOC enrollments even when LOC recipients fail to earn credits or certificates, as long as they have satisfactorily interacted with the learning opportunity through the end of the course. This provision mitigates the risk that LOCs will incent credit mills in which mere enrollment in a course is sufficient for receipt of its credit benefit. Requirements for providing access to data on student digital use will yield enhanced transparency over any current federal funding programs, and encourage maintenance of clear and high learning standards in LOC-eligible offerings via reputational incentives as well as scientific peer review via FLOW.⁵ In addition, the LOC program will expect that clear learning standards, outcomes, and assessments are required components of any thorough and legitimate accreditation process necessary for either Title IV or LOC eligibility.

LOC reimbursements constitute a new revenue stream for learning organizations that neither replaces nor supplants grant and loan programs under Title IV. LOCs thus elide the protectionist politics attending legacy programs. Because LOCs begin with very large numbers of beneficiaries and bear the promise of becoming a universal benefit program, they create vast new demand for instructional services simultaneously with large new potential revenue streams for learning organizations. Akin to the rapid change in demand and supply for postsecondary learning opportunities that followed passage of the GI Bill (1944), the National Defense Education Act (1958), and the Higher Education Act (1965), LOCs expand and transform the national postsecondary ecology. While participation of learning organizations is fully voluntary, the financial incentives of participation, the substitution of interoperability data access agreements for burdensome administrative reporting requirements, and what we expect will be strong political pressure to contribute to a collective civic good will elicit participation from a wide range of schools and their partners. Additionally, LOCs create incomparable opportunities for basic and applied research in a plurality of fields. These opportunities are especially appealing to research universities.

Indeed, the integrity of the LOC program relies on the provision of access to data for a new national research initiative charged with enhancing educational transparency and fostering applied science to improve the delivery of digital education, adult education, and workforce development.

PROPOSAL 2: FUTURE OF LEARNING, OPPORTUNITY, AND WORK (FLOW)

An important challenge of any additional federal outlay to instructional providers is quality control. Proposal 2 meets this challenge by obliging providers not simply to subject these courses to formal accreditation reviews, as with their legacy offerings, but also to provide greatly enhanced and ongoing transparency on the nature of student learning and engagement and measurable returns to LOC recipients as they move through their adult lives.

Under Proposal 2 the federal government, through one of its existing agencies (e.g., IES, NSF, Labor) or a collaboration across agencies, will commission and fund a national initiative on FLOW. FLOW will be charged with promoting transparency in educational delivery as well as commissioning, integrating, and disseminating applied research to sustain the enduring vitality of an education system that prepares a globally competitive U.S. workforce. Through its RFP process, FLOW will incentivize and routinize the formal input of employer groups, professional associations, and unions to ensure that FLOW efforts and inquiries are aligned with local, regional, and national workforce needs. FLOW will be anchored by a network of competitively selected universities (and their

business, associational, and philanthropic partners) that will serve as organizational hubs for distributed research projects, technical assistance, and dissemination. Funded research will catalyze collective action among schools, business firms, philanthropies, worker organizations, government agencies, and academic researchers. In doing so it will produce tractable insights for ensuring the quality and value of LOC offerings and, by extension, the ongoing vitality of the U.S. education and workforce development systems.

FLOW will have responsibility for creating a web portal to provide information to the public on eligible LOC program offerings by area of specialization. In addition, LOC providers will have the ability to opt in to participate in a feature of the web portal offering transparent public reporting on FLOW-designed performance metrics. Performance metrics on specific LOC-eligible offerings may include academic engagement, course completion, and subsequent employment outcomes. Results will be disaggregated by social background to encourage LOC providers to attend to promoting equitable outcomes across demographic groups. LOC providers will have strong incentives to participate in this web portal feature since published metrics will significantly increase program visibility, reducing marketing costs that are a significant barrier to program development and growth.

Data contributions facilitated by learning providers as a condition of LOC reimbursement is the empirical backbone of FLOW. Access to data will be statutorily specified and generated from administrative and learning management systems to include LOC recipient demographic characteristics, course instructional design features, academic engagement measures derived from click stream data in learning-management platforms, academic achievement indicators, and transcript data. As a federally supported initiative, FLOW will be well positioned to broker partnerships between FLOW hubs and other federal data fiduciaries (ED, U.S. Census Bureau, IRS, e.g.) to enable longitudinal observation of the relative benefit of particular LOC programs, for particular demographic groups, in particular regions. FLOW will work to integrate activities focused on instructional design, academic engagement, and student learning as well as subsequent employment and life-course outcomes associated with LOC-supported coursework. Findings produced by FLOW will be formative in character and designed to improve practice, and will not be punitive or narrowly tied to ensuring accountability in a manner that would discourage participation. Instead, the contractual data obligation tied to LOCs will seed a culture of transparency and dispassionate study of educational effectiveness. Providers' inherent concern with their institutional reputations encourages efforts toward outcomes of measurable quality, whether through learning gains, improved earnings, or

successful career transitions of LOC recipients.

Data sharing from LOCs will allow for better identification of costs, learning gains, and employment outcomes. Cost assessments will necessarily include student support services to ensure that LOC recipients from diverse backgrounds achieve success. The analytical capacity that will be brought into being by LOCs and FLOW contrasts sharply with the lax reporting requirements mandated for colleges and universities in the present, in which even the most basic facts about cost and value of postsecondary instruction are difficult to ascertain. While graduation rates and earnings data have begun to be made publicly available to researchers and college-seekers, the present data environment includes essentially no comprehensively representative information on learning, human development, social-capital formation, or civic participation of LOC recipients. FLOW will take advantage of rapidly accreting capacity for measuring such factors via learning management systems and other digital platforms at scale for individual students in courses on a routine basis (e.g., Arum et al. forthcoming; Chirikov et al. 2020; Kizilcec et al. 2020).⁶

FLOW will award research grants through competitive RFPs; grantees will be selected through a rigorous peer review process. Explicit priority will be given to proposals that involve active collaboration across organizational and sectoral boundaries (e.g., among a research university, a set of community colleges or other broad-access partners, a state or federal government data fiduciary, and a large employer or proprietary data holder). Strong preference will be given to proposals that include substantial participation from institutions that typically do not receive their proportional share of federal research dollars (e.g., HBCUs and other minority-serving colleges and universities, community colleges). An explicit goal of FLOW is to encourage collaborative research and adoption of improvement-science practices across divisions of organizational type.

FLOW takes advantage of a watershed moment in academic history, during which learning and its allied sciences are being transformed by the ubiquity of digital data and computational technology (Fischer et al. 2020; Kurzweil and Stevens 2018; Waldrop 2013). FLOW is truly interdisciplinary, inviting and perhaps even obliging cooperation among computer scientists, education specialists, neuroscientists, psychologists, and social scientists in every field. Just as LOCs do not replace Title IV funding, FLOW does not replace other federal research funding streams from the NSF, the National Institutes of Health (NIH), and IES. This independence elides turf wars within legacy agencies and creates tangible financial incentives for participation from top researchers and institutions.

Questions and Concerns

1. Are these proposals feasible without universal broadband internet access?

To ensure equitable expansion of educational opportunities, it is imperative to expand broadband internet home access. By 2019 approximately 80 percent of households with individuals aged 18 to 64 had broadband internet, with substantially lower access for Black, Latinx, and low-income households, as well as for households in tribal and rural communities. Overall internet use is higher than home broadband access with approximately 90 percent of U.S. adults reporting internet use (Pew Research Center 2019). Ideally, the programs proposed here would be bundled with a federal infrastructure initiative, perhaps a public-private partnership, to ensure universal broadband access for all Americans.

While it is imperative to address the problem of broadband access, another sobering statistic is relevant: 14 percent of Americans live in rural counties that lack a single two- or four-year college (Wozniak 2018). In much the same way that New Deal programs enabled colleges and universities to reach rural Americans with extension programs (Loss 2012), our proposals would create strong incentives for existing schools to serve communities and regions poorly served by the present physical geography of higher education. We believe that sufficient broadband internet exists to launch our proposals, even while efforts are being made to make broadband access universal.

2. How are LOCs different from Pell Grants?

Pell Grants are direct cash transfers to students, who are expected to use the funds to pay for expenses related to their pursuit of higher education. While Pell Grants provide essential financial support to millions, they offer no mechanism for encouraging cost control or instructional quality among instructional providers. LOCs are additional benefits for LOC recipients, and they function like vouchers: recipients exchange

LOCs for enrollment in accredited and registered programs and the government transfers payment to program providers. Because LOCs have fixed values, come with data-sharing requirements, and are accompanied by a prohibition on the levying of additional fees, they create strong incentives for learning organizations to offer programs of measurable quality at reasonable cost.

3. How will the initial reimbursement rate for LOCs be determined?

Determining the inaugural reimbursement rate for LOCs is an ideal task for a multidisciplinary team of education policy experts, economists, and market designers, informed by representatives of key organizational populations such as community colleges, HBCUs, and public- and land-grant institutions, among others. The task will entail conscientious discovery of current costs from learning organizations with long experience in providing online/blended instruction. We envision an iterative process for setting reimbursement rates, with an inaugural rate subject to subsequent review in light of lessons learned from initial implementation. A key advantage of our proposals over current Title IV funding is that they oblige a national conversation about how much a quality unit of postsecondary instruction should cost. In our view, this conversation is long overdue.

4. Can people who do not qualify for LOCs access these learning opportunities?

We would encourage this. Many educational offerings eligible for LOC reimbursement will be sufficiently attractive that many will seek to pursue them even if they do not qualify for LOCs. Participating learning organizations would have strong business incentives to make these instructional programs available under paid enrollment, perhaps partnering with large employers to cover enrollment costs in particular courses and programs for their workers.

Conclusion

Our proposals are designed to address short-term needs of students and schools facing an acute multidimensional crisis, while simultaneously addressing chronic problems in the national postsecondary ecosystem that have become barriers to expanded access, equity, and educational opportunity. We have designed our proposals to be expansive and inclusionary, not punitive, to generate broad support from a diverse set of stakeholders.

Providing LOCs to young adults builds on a long U.S. tradition of offering postsecondary opportunities to more and more people over time, while simultaneously fostering novel, hybrid pathways for postsecondary education and workforce training. Because many LOCs will yield transferable college credits, we fully anticipate that many will take advantage of them to begin or continue college at home now, and then later to enter or reenter residential campuses. In this manner the program continues a national commitment to postsecondary access, but on terms that make sense financially and logistically and that encourage productive change in the entire postsecondary ecology.

Investment in FLOW builds a national infrastructure essential for maintaining U.S. preeminence in higher

education and may make it a global model for encouraging lifelong learning. The delivery of high-quality education in the coming years and decades will be dependent not on brick-and-mortar infrastructure, but on data-driven learning systems that make use of ongoing analysis of click-stream data, artificial intelligence, and learning analytics. The nation's ongoing economic vitality requires that the federal government invest in that infrastructure, just as in prior eras it made capital investments in other technologies—telecommunications, space travel, semiconductors—to maintain global competitiveness (O'Mara 2015).

Higher education requires new resources to expand access, equity, and opportunity, and new mechanisms for systematic, ongoing, evidence-based improvement. Bipartisan support for courageous investments will be possible only when resources are sought to attain new goals, not to buttress and maintain the status quo. Investment in these twin policies is needed now not just to address the immediate needs of displaced workers and financial challenges of colleges and universities, but also to invest in the necessary infrastructure to ensure for the remainder of the 21st century the vitality and inclusiveness that has long made higher education in the United States the envy of the world.

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Endnotes

1. See also the provisions of the proposed HEROES Act (National Conference of State Legislatures 2020).
2. A major change in the organization of student loans occurred in 2010, when the federal government became the direct lender of record for loans, rather than guaranteeing loans provided by third parties. The Obama administration pursued this change in the wake of the 2008 financial crisis, which surfaced the vulnerability of a by then elaborately securitized student debt market. Here again, crisis breeds reform. See Berman and Stivers (2016) for a concise account.
3. The Interstate Highway Act (1956) and The National Defense Education Act (1958) were passed only two years apart, and both were framed explicitly as projects of national security (Lewis 2013; Loss 2012).
4. See, for example, the collected papers at Responsible Use of Student Data in Higher Education (n.d.).
5. Institutional access to the credits might be further conditioned on other requirements aligned with transforming the sector. For example, institutions could be required to adopt, by 2025, the University of California system requirement that for every two entering first-year students, one advanced undergraduate transfer student must also be admitted.
6. We note serial proposals in recent years to better harness the power of computation and digital delivery to substantially improve learning in U.S. schools. See, for example, the serial proposals by Chatterji and Jones for K–12 education (2012, 2016). We believe FLOW has substantially greater potential for implementation and tractability because the program is tied directly to a strong financial incentive—eligibility for LOCs—thus encouraging schools to participate.

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Highlights

The COVID-19 pandemic has brought new urgency to chronic and interrelated educational challenges: the need to expand and equalize college access, reduce the higher education sector's costly reliance on in-person instruction, and develop a cumulative science of adult learning. Current federal government college funding programs do not encourage schools to be cost-efficient or build toward the future needs of the U.S. workforce, let alone respond to the acute needs of students brought about by the pandemic.

The Proposal

In this proposal, Richard Arum of the University of California, Irvine and Mitchell Stevens of Stanford University propose twin federal government initiatives to incentivize innovation in higher education systems' instructional delivery, bridge the divide between academia and the workforce, and create a cumulative science of adult learning.

- **Implement Learning Opportunity Credits (LOCs).** There is currently a gap between the higher education system and the needs of the U.S. workforce. To help bridge this gap, the federal government would issue Learning Opportunity Credits (LOCs) to qualified adults to promote ongoing workforce training and the expansion of high-quality hybrid learning opportunities.
- **Commission a national initiative on the Future of Learning, Opportunity, and Work (FLOW).** Under the second initiative, the federal government would establish a national project on the *Future of Learning, Opportunity and Work* (FLOW), a collaboration between existing federal agencies and a network of competitively selected U.S. universities and their partners, which will accumulate knowledge and inform policy on adult learning to serve the national interest moving forward.

Packaged as dual initiatives and linked through data sharing and interoperability protocols, LOCs and FLOW are joint ventures.

Benefits

The gap between higher education and the needs of the U.S. worker has left the labor market less adaptive to the many changes brought about by the COVID-19 pandemic. The joint initiatives offered by Richard Arum and Mitchell Stevens will help change the current higher education system to align with the needs of U.S. workers. Together, workers will be matched to higher education institutions with a reduced cost burden, and data sharing between universities and their partners will lead to informed policy decisions on adult learning.



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