

REIMAGINING EDUCATION FOR A NEW MAP OF LIFE

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Educational attainment has come to divide our society, distinguishing those who can anticipate long healthy lives from those who cannot. Americans with a four-year college degree live about nine years longer than those without a high school diploma.¹ Postsecondary education equates to more job opportunities, more economic security, and better health.² Life expectancy is rising only for those who enroll in college.³ The evidence is clear: the longer Americans attend school, the better and longer they live.

In the arc of US history, this is a new phenomenon. Eighty years ago, how long and how well we lived had little to do with our postsecondary credentials. In 1940, fewer than 5% of Americans earned four-year diplomas and very few jobs required them. However, between 1945 and 1980, massive public investment in postsecondary education, as part of national efforts to wage the Cold War, transformed the place of college in the life course. This investment also came with an unintended consequence for the national class structure. College degree attainment reconfigured the landscape of opportunity for all Americans and stratified life chances. Ample evidence shows that children raised in White, affluent, and well-educated households are much more likely to reap the benefits of postsecondary education, leading long and healthy lives. These cumulative changes have exacerbated political conflict between those Americans who are poised to have bright futures for themselves and their children, and those who see that the game of life is rigged against them.⁴

This report calls for the nation to reconfigure the provision of education across the life course so that its benefits can be more widely and equitably shared by Americans across class, racial, and geographic divisions.⁵ Intensive investment in well-resourced and healthy learning environments in the earliest years of life, coupled with imaginative innovation in postsecondary pursuits will create conditions in which the benefits of education can unite Americans rather than divide them.

Reconfiguring how postsecondary education is delivered is not simply a matter of creating more seats in the colleges and universities inherited from the twentieth century, lowering tuition rates, or extending more financial aid to needy families. It instead requires a dual strategy of ensuring children's capacity and desire for education during their earliest years while simultaneously reconfiguring postsecondary learning opportunities so that they are easily accessible to people over lengthening lifespans. While specific strategies for investing in early childhood are outlined by our colleague [Jonas Miller in a separate *New Map of Life* report](#) on early childhood, ours focuses primarily on postsecondary education. We offer a concise review

of the copious research linking investments in early childhood with adult educational attainment and the relationship between that attainment and quality of life; synthesize the complicated history of postsecondary expansion in the United States after 1945; summarize the problems inherent in the current organization of postsecondary provision and delivery; and offer specific recommendations for policy makers, legacy colleges and universities, employers, and providers.

HOW EDUCATION AND LONGEVITY ARE LINKED

Educational attainment is fundamentally sequential. Progress in the earliest years of life lays the groundwork for learning and educational trajectories throughout adulthood. The foundations of brain architecture and lifelong developmental potential are laid in children's early years, through a conjointly physiological and social process that is highly sensitive to environmental influence.⁶ The first five years set children up for success in kindergarten through high school (K-12).⁷ Those who struggle to attain basic literacy and numeracy in early childhood have a hard time catching up in later years. Children who cannot read proficiently by third grade are four times more likely to leave high school without a diploma – and six times more likely if they live in low-income households. Tragically, fully two-thirds of US children reach fourth grade without having achieved proficiency in both math and reading, while those who are proficient are more likely to do well academically throughout high school.⁸ Success in high school subsequently positions young people to consider, enroll and persist in college.

Those who go on to college have more job opportunities and more economic security. For example, of the 16 million jobs created in 2019, only 19% could be obtained with just some college education, and a mere 0.003% (about 55,000 jobs) were available to those who had only a high school diploma.⁹ Education is also directly linked to higher pay. In 2019, Americans who had dropped out of high school earned an average of about \$31,000 annually. Those with high school diplomas earned over 25% more – about \$40,000 – and graduates with some college education or an associate (two-year) degree earned on average an additional \$5,000. But the biggest pay bump comes with a four-year bachelor's diploma: Americans with a bachelor's degree earned about \$66,000, and advanced degree holders earned about \$81,000.¹⁰ Compared to those who do not finish high school, graduates with bachelor's degrees have sufficient additional earnings to purchase a new car every year.

People with higher rates of education are also healthier, partly because they have more financial resources to invest in their health. People with four-year college degrees are less likely to smoke, be depressed, have heart disease, and have high HDL cholesterol levels – factors that significantly influence risk for cardiovascular disease.¹¹ People with bachelor's diplomas also have better access to psychosocial resources and a stronger sense of control and social support, both of which are helpful in dealing with health shocks that come later in life.¹² Those with more education are also better prepared to make use of new technologies and to adjust to changing environments including job changes or the transition to retirement.¹³ All of these advantages translate into longer, healthier lives.¹⁴

EDUCATION OPPORTUNITY GAPS ARE FORGED IN EARLY CHILDHOOD

Preparation for college entry begins early in life, and children raised in relatively affluent families are much more likely to be ready for college than those from modest socioeconomic backgrounds.¹⁵ The latter are often people of color, non-native English speakers, and those residing in rural areas.¹⁶ Social scientists use the term *opportunity gap* to summarize the multiple and conjoined processes through which the demographic circumstances of birth – including the race, immigration status, wealth, earnings, and zip code of one’s parents – substantially determine life chances.¹⁷ These demographic realities and their educational consequences contradict enduring American cultural beliefs about the primacy of individual ambition and hard work in determining life outcomes.¹⁸

Middle- and upper middle-class children tend to live in well-resourced neighborhoods with strong social infrastructure that provides them with access to playgrounds, libraries, and safe outdoor play spaces.¹⁹ They are likely to attend well-funded public schools because their parents live in places with strong property values that equate to higher local tax revenues. They generally participate in more extracurricular activities providing physical and intellectual enrichment, subsidized by their parents’ high incomes. And they have more familial and geographic stability, which means they are spared the serial moves that oblige less affluent children to change schools and sever social ties more often.

The implication of material resources in the environments of early childhood substantially influence educational attainments later in life. At as early as eighteen months of age, toddlers from poor families are already several months behind more affluent children in language proficiency, relative to those with more affluent parents who talk and read to their children throughout infancy.²⁰ Between birth and age six, wealthier children will have spent as many as 1,300 more hours than poor children on enrichment activities such as music lessons, travel, and summer camps.²¹

By contrast, poor children are more likely to live in neighborhoods with weak social infrastructure, including poorly maintained or non-existent recreational facilities, physically unsafe public spaces, and unreliable city services. Parents’ work schedules are more likely to be erratic, leaving them with little time for sustained interaction and instructional enrichment for children’s learning. Food and housing insecurity are common. Community-wide precarity also influences children’s educational attainment. For example, job losses from plant closings can lower the test scores of students with low socioeconomic status, even for those whose parents have not lost their jobs.²² And because Americans are increasingly living in economically homogeneous neighborhoods, schools in poorer communities consistently enroll high proportions of poor children. A child from a poor family is two to four times more likely than a child from an affluent family to have classmates with low skills and behavior problems, which have a negative effect on everyone’s learning.²³ Students learn less if they attend schools with high student turnover during the school year – a common occurrence in schools serving households supported by precarious employment.²⁴ Schools in neighborhoods with high crime

rates also have lower levels of teacher commitment, parental involvement, and student achievement.²⁵

The opportunity gap also divides racial groups. Approximately 44% of White adults ages 25-29 have a four-year college degree, but among Black adults and other racial/ethnic minorities, the rates are substantially lower: 23% of Blacks, 21% of Hispanics, 16% of Native peoples, and 15% of Pacific-Islanders. Racial/ethnic minorities are about half as likely to obtain college degrees as White Americans because students of color face a host of social and environmental disadvantages that translate into academic obstacles. Black children are disproportionately absent, suspended, and expelled.²⁶ Often, implicit bias among teachers and school administrators, most of whom are White, leads Black students to face harsher discipline than White students for similar behavioral infractions.²⁷

By virtue of the sequential character of education and learning, opportunity gaps in early childhood produce stark disparities in educational attainment by class and race across the entire life course. These disparities in turn bring variation in life expectancy and life chances.

THE RISE OF COLLEGE

The United States was the first nation in the world to expand access to postsecondary education and make “college for all” a prominent cultural ideal.²⁸ This expansion, coupled with the broad cultural support for the idea of college education as a mechanism of social mobility, is what we mean by the rise of college. Long understood as an unqualified social good in American culture and political discourse, the rise of college produced stark discrepancies in life chances by the end of the twentieth century. In recent decades it has become the basis of deep divides in the life circumstances, cultural outlook, and political commitments of American adults.²⁹

While the expansion of access to postsecondary education following the close of World War II is often colloquially understood as a response to the growing technological demands of a changing economy,³⁰ arguments about technological change have only occasionally been used to motivate massive public investment in higher education. The more proximate and consistent motivations have been tied to projects linked to twentieth-century warfare.³¹ The federal government relied heavily on colleges and universities to mobilize civilians into military service to fight in World War II. Academic psychologists devised innumerable tests to measure fitness for enlistment and suitability for assignment. Academic science and engineering departments were serially contracted to provide designs for communications, surveillance, and combat machinery. College and university leaders were almost uniformly enthusiastic about wartime military contracting because it offered unprecedented levels of government patronage, public visibility, and political prestige to institutions often regarded as bookish luxuries for the well-to-do.³²

Colleges and universities performed their wartime service so well that they were enlisted to reward and reabsorb military veterans at the conclusion of World War II. The Servicemen’s Readjustment Act of 1944, popularly known as the GI Bill, enabled veterans to attain

postsecondary credentials via a substantial government subsidy. In addition to ultimately sending two million people to college, the GI Bill transformed the cultural meaning of college: once the rarefied purview of the economically privileged and academically exceptional, college attendance became an affordable aspiration for young men from a wide range of social backgrounds.³³ The idea of broadly accessible higher education received additional political momentum with the 1947 publication of *Higher Education for American Democracy*, the six-volume report of a commission appointed by President Truman that called for the creation of public community colleges across the nation.³⁴

The Cold War brought massively greater subsidies to US higher education. As a direct counter-offensive to the Soviet launch of the Sputnik satellite into Earth's orbit in 1957, Congress passed the National Education Defense Act (NDEA) of 1958, which ultimately vested billions of dollars in every rung of the education ladder, from elementary schools to research universities. By the time Lyndon B. Johnson assumed the presidency in 1963, government support of higher education had become a core component of the US institutional order – a central node of connection between government and civil society.³⁵ It was therefore unsurprising that President Johnson called on colleges and universities to assist in waging another war – the so-called “war on poverty” of the 1960s. The Higher Education Act of 1965 expanded the reach of federal subsidies for college beyond military veterans, making postsecondary access a central tenet of the American dream.³⁶

This is how college came to be associated with middle-class respectability. But even in those heady decades of massive public provision, inequalities of class and race were getting baked into the rise of college in three ways. First, possession of a high school diploma or an equivalent credential is an essential prerequisite to enjoying the benefits of accessible and affordable higher education. But as noted above, a significant portion of the inequalities in educational attainment is generated well before young people are eligible to graduate from high school. As a result of the socioeconomic stratification and racially discriminatory provision of K-12 education, the benefits of college access flowed disproportionately to children from privileged families.

Second, starting with the passage of the Higher Education Act, federal government programs for tuition assistance were structured on the presumption that students and their families should shoulder some of the costs of college. As a result, federal subsidies in the form of guaranteed loans oblige all but the most affluent to borrow money to complete their education.³⁷ As a result, students from poorer families assume much more financial risk with college attendance than the wealthy students studying alongside them.

Third, the rise of college enabled employers to sort workers on the basis of their possession of postsecondary credentials.³⁸ What on the surface seems like a reasonable employment screen – some jobs require college-level skills – also means that firms have legitimate means of categorically excluding otherwise qualified applicants whose life circumstances have precluded college attendance. And because White and relatively affluent applicants are more likely to possess college degrees, making these credentials prerequisites for

employment effectively leads to discrimination in favor of those demographic groups that enjoy the advantages of opportunities to learn from the earliest years of life.

The socially divisive consequences of the rise of college were difficult to foresee in the middle of the twentieth century – a time in which there were pathways to middle-class prosperity that did not necessarily lead through a college or university. During the 1950s and 1960s, when the rise of college reached its zenith, the nation’s labor unions were also at the height of their power and influence. Stable, well-compensated jobs in industrial manufacturing were widely available for White men without college diplomas, enabling the achievement of financial prosperity and a distinctive version of White masculinity emphasizing the work of hands and bodies.³⁹

Only in the wake of precipitous declines in union-protected manufacturing jobs during the 1970s and 1980s did the discriminatory features of the rise of college become apparent. As ever more industrial manufacturing moved overseas, well-compensated jobs were concentrated in white- and pink-collar sectors where the presumed necessity of high-level literacy, numeracy, and interpersonal communication skills enabled employers to require postsecondary credentials. Those without them – not only the poor, Black and brown but also modestly educated White men – increasingly confront economic insecurity.⁴⁰

Until very recently the national policy consensus on how to fix this problem has been to continue to push the rise of college. If only more people – perhaps all adults – could achieve postsecondary credentials, the argument goes, then the benefits associated with higher education could accrue across the entire population. However optimistic, by the early decades of the current century, the “college for all” approach has revealed its own profound limitations.

CHALLENGES

The spectacular success of the rise of college in engendering longer, healthier lives for Americans who attain four-year college diplomas has also created new problems of economic and health inequality. Addressing these problems will require sober recognition of four core challenges.

First, given that most of the inequality in educational attainment occurs by the point of high school graduation, this means that US colleges and universities do relatively little to foster upward mobility. Only about 2 percent of graduates from Ivy-Plus colleges (the Ivy League plus Stanford, MIT, Chicago, and Duke) rise from the bottom quintile to the top quintile of the income scale, since most students at these elite institutions are already affluent.⁴¹ Mobility rates are only modestly better at public flagship institutions.⁴² US higher education is akin to an elevator in a structure in which most people enter on the upper floors. As a result, colleges do less to expand opportunity than to consolidate privilege.⁴³ For those who espouse the longstanding American mythology of higher education as a vehicle for socioeconomic mobility, this is a hard truth to accept. Although this vision of opportunity is invoked by politicians across the ideological spectrum, it does not reflect the actual lived experiences of millions of Americans. For those lucky enough to have obtained postsecondary credentials, it is easy to

forget that most of their fellow citizens do not have four-year college degrees. Constantly admonishing people to go to college by telling them that their economic and civic worth is tied to their educational attainments can be more insulting than inspiring.⁴⁴

Second, the fateful policy decision to finance college attendance through student loans has created a pernicious catch-22 for ambitious but non-affluent Americans. The easy availability of loans, coupled with a general encouragement from social scientists, philanthropists, and schools themselves for young people to “invest” in their futures, created a huge market demand for bachelor’s degrees and graduate-school credentials. Since federal regulations placed no limit on the fees schools could charge to receive government student aid, costs rose steadily for decades. By the end of the twentieth century, when virtually all paths to well-compensated, career-laddered employment included spending time and money on college degrees, those without family wealth were obliged to either settle for precarious employment or mortgage their futures by borrowing large sums of money to pay for college. About two-thirds of 18 to 29-year-olds who complete college carry \$30,000 of debt.⁴⁵ For those wishing to save money for a home purchase or to start a household, this debt is incredibly onerous. Those who take the risk of borrowing for college but for whatever reasons are unable to complete their degrees suffer the twin fate of indebtedness and diminished earnings. College has become so expensive that many people do not think it is a worthwhile investment. Without major changes in the basic financial architecture of postsecondary provision or the relative value of the bachelor’s diploma in labor markets, millions of Americans will continue to face these dilemmas.⁴⁶

Third, the nation’s more than 4,000 colleges and universities have a strong interest in maintaining the financial status quo, and they have become a formidable lobbying force in Washington. Eligibility for Pell Grants and subsidized loans under Title IV of the Higher Education Act has not substantially changed for decades. Even the spectacular acts of institutional self-interest and disregard for student success that characterized the for-profit college debacle of the early twenty-first century failed to garner revisions to Title IV eligibility requirements. And even if a more activist administration were to succeed in constraining access to Title IV funds by for-profit schools, they would likely continue to face resistance on fee constraints at public and private non-profit sector schools, whose leaders fiercely defend the privilege of setting their own rates for tuition and fees.⁴⁷

Finally, even if it were possible to achieve a full-scale reorganization of postsecondary financing that would enable universal access to affordable four-year college degrees, we would still be left with an educational model premised on educational investment in the first quarter of the life course. This is one of the key problems the *New Map of Life* is intended to redress. Formal education and informal learning alike must be transformed to enable human flourishing across ever longer lives in an ever more diverse society.

We see several avenues for addressing these challenges: invest in opportunities to learn in the earliest years of life, encourage innovation in alternative credentials, and develop novel means of evaluating and rewarding workers.

REIMAGINING EDUCATION ACROSS THE LIFE COURSE

Dramatic changes in the organization of higher education and work over the past seventy years motivate a reconceptualization of how to create equitable opportunities for Americans to ensure their well-being across ever longer lifespans. Most important is to recognize that the way the US enabled social mobility in the twentieth century – by expanding the availability of conventional college degrees – is by itself no longer sufficient for sharing prosperity across the entire population. Indeed, merely expanding access to college in its current form will likely only reinforce already stark distinctions in life chances between those who possess college credentials and those who do not.

Nevertheless, the enhancement of educational opportunity across the life course remains one of the best ways to share prosperity among more people living longer lives. This is partly because the benefits of educational attainment for physical health, emotional well-being, and economic security are so well established in the scientific literature; and partly also because educational provision is one mechanism of ensuring individual and collective welfare that is broadly celebrated in American culture. While other forms of social welfare often carry a negative stigma, enhancing educational opportunity has been embraced with enthusiasm throughout the nation's history.⁴⁸ Ambitious projects for equitable social change thus appropriately include the expansion of educational opportunities.

Overlooked in the discussion surrounding the expansion of educational opportunities is reframing the issue as about when in the life course of Americans should such opportunities be available. A common misconception is that education should be frontloaded in the beginning of life because aging leads to cognitive decline. This is not true. As people age, developmental changes affect their learning in different ways. Up through early adulthood, people's ability to reason – to generate, transform and manipulate information – does increase. But our ability to accumulate knowledge also increases as we accumulate more formal schooling and life experiences.⁴⁹ Reasoning ability begins to decline after early adulthood, but the knowledge base with which adults reason *increases* until they are about sixty years old. This is because it is easier for humans to acquire new information when they already know something about a topic. For example, older adults are better able to learn new information about heart disease because they already have a knowledge base about human health generally.⁵⁰ The same is true for investment products: it is easier for older adults to assimilate new information about financial matters because prior knowledge facilitates further learning.⁵¹

Aging also brings cognitive benefits. For example, as people age, they hone other skills, such as solving social dilemmas.⁵² It may be that older people are better able than younger people to evaluate the negative consequences of decisions. Alternatively, it could be that older adults focus on the bigger picture of how particular dilemmas relate to the broader values and feelings of those involved—a shift that can be described as the growth of “wisdom” that plays an important role in the knowledge networks and cultural traditions of every human collective. As people age, they also find that different things motivate them to learn compared to what drove them earlier in life.⁵³ Goals change. The motivation to achieve and be recognized for one's

achievements tends to decline with age, while continued growth and realizing aims (for their own sake) become increasingly important – as does the desire to use hard-won skills to assist others.⁵⁴

Reimagining education across the life course provides an opportunity to develop educational models that would prepare all Americans for lifelong learning in the earliest years of life, while also strategically leveraging the learning assets that accumulate across ever longer lifespans. To help move the nation toward these goals, we offer specific recommendations for government policy makers, legacy colleges and universities, employers, new education providers, and third-sector organizations.

For policy makers

While we encourage policy makers at all levels of government to support novel educational models, our recommendations here are targeted at US federal government policy.

- 1. Invest substantial public resources to reduce child poverty, increase access to early childhood education, build social infrastructure in low-income neighborhoods, and explicitly define these investments as educational.* Evidence is clear that enhancing opportunities to learn in the first years of life pays off substantially in educational attainment and its associated benefits across the life course.
- 2. Incentivize institutional recipients of Title IV funds to give greater attention to adult and lifelong learners.* Funding is one of the primary tools of the federal government to encourage changes in educational provision. The US Education Department should consider using Pell Grants (or some novel funding source) to encourage colleges and universities to develop programs specifically for adults over the age of 25. Doing so would help to normalize the notion that postsecondary educational attainment can happen throughout adulthood and not just in the first quarter of life.⁵⁵
- 3. Develop infrastructure to observe, experiment with, and improve adult learning opportunities.* The nation is currently without any systematic mechanism for observing the learning effectiveness or labor-market (or other) returns of educational opportunities beyond conventional postsecondary degrees. Additionally, the applied science of adult education is a tiny field in the US. Federal and/or state-level appropriations for postsecondary education should include funding for building an observational infrastructure and should provide financial or regulatory incentives for education providers to contribute.⁵⁶
- 4. Restrict access of Title IV and other federal funds to public or private non-profit providers.* While we are encouraged by the remarkable blossoming of new forms of adult learning opportunities in the private sector, for-profit colleges and universities have a largely deserved reputation as irresponsible civic actors that prioritize revenue and shareholder gains over student learning and degree completion.⁵⁷ Another policy alternative is that access to Title IV and other federal funds would be allowed to flow

to for-profit providers on the condition that they contribute data and expertise to the development of the observational infrastructure called for above.

5. *Review educational requirements for civil employment.* To the extent that postsecondary credentials do not certify knowledge or skills necessary to successfully perform a job, they should be considered as unacceptably discriminatory requirements for civil employment.

For legacy colleges and universities

We define legacy colleges and universities as schools organized around the provision of conventional associate, bachelor, and graduate credentials. Legacy institutions are vital civic anchors in thousands of communities in every corner of the United States, and they have long been incubators for the creation of novel programs of study. Some legacy institutions – specifically but not exclusively community colleges – have long embraced adult learners and defined lifelong learning as core to their mission. Yet most colleges and universities offering bachelor and graduate degrees remain organized primarily around delivering such an education to those between the ages of 18 and 24. We encourage these schools to expand their attention to adult learners in at least three ways.

6. *Experiment with programs that will bring more adults into undergraduate classrooms.* Legacy schools might begin with the premise that diversity of age and life experiences are important attributes of ideal learning environments. To enable this diversity, they might develop application pathways and scholarship funding specifically for adult learners, relax requirements for on-campus housing or full-time enrollment for undergraduates over the age of 25, and provide community-building and academic-support services specifically for adult learners.
7. *Support employees without postsecondary credentials in attaining college degrees.* Legacy schools typically employ many people in positions that do not require college degrees as prerequisites for employment. These same employees face ceilings on job advancement on campus if they lack postsecondary credentials. Legacy schools should experiment with ways in which their instructional capacity might be made meaningfully available to all their workers as employment benefits.
8. *Review educational requirements for employment.* As employers themselves, legacy schools might be leaders in the growing national movement to critically consider the functional necessity of college degrees for particular jobs. Degree requirements may be relaxed or changed if candidates can demonstrate competence or mastery of skills and tasks through alternative routes.

For employers

The routines through which employers recruit and evaluate candidates for jobs and organize internal promotion are essential ties linking formal education and economic opportunity. The current hegemony of the four-year bachelor's diploma as a prerequisite for stable, career-

laddered, well-compensated employment is perhaps the most important of these ties. Loosening it would enable millions of people to access jobs that are currently categorically closed to them.

- 9.** *Review job requirements calling for four-year college degrees.* Employers should assess the functional necessity of four-year degrees as a prerequisite for hiring in every job category, eliminate the prerequisite where possible, and/or allow alternate means for job candidates to demonstrate their capacities.
- 10.** *Consider ways for credentialled learning to be a portable benefit for employees.* There is a growing movement to offer credentialled learning opportunities to workers as portable benefits. Employers should contract with outside parties to make credit-bearing college courses available to large numbers of workers.⁵⁸ Such programs provide tangible value for both firms and employees and affirm the importance of learning while working.
- 11.** *Contribute data and capacity to the development of infrastructure to observe and improve novel pathways between formal education and work over the life course.* Building a robust applied science of adult and lifelong learning will require the cooperation and involvement of employers in a virtuous cycle of experimentation, observation, and improvement of instructional services.

For new learning providers

A great virtue of the US postsecondary ecology is its capacity to expand and change as the needs of industry and citizenry evolve.⁵⁹ Today that ecology is burgeoning with new entrants that are not legacy colleges and universities. These new providers do not inherit the same public funding streams or cultural legitimacy of legacy institutions and currently are minimally regulated. We encourage the founders and leaders of these organizations, as well as their funders in the private and philanthropic sectors, to actively contribute to the applied science of adult and lifelong learning. Specifically, these new providers should:

- 12.** *Measure the value of what their services contribute to learners over long periods of the life course.* Performance cycles in business are short, yet the returns on educational investments are only realized over time. The copious research we cite throughout this report demonstrates the long-term value of educational investments in early childhood. New providers might take the lesson of this science and develop mechanisms for observing the impact of their programs throughout the adult lives of their alumni.
- 13.** *Cooperate with legacy colleges and universities to share data and expertise.* Just as the budding tech industry benefited enormously from industry/academia partnerships in the mid-1900s,⁶⁰ parallel partnerships in education and learning research could yield spectacular insights for the improvement of educational services and the development of more efficient linkages between school and work. Legacy colleges and universities can offer capacity for scaled research and scientific and instructional

training, while new providers can offer nimbleness and on-the-ground know-how to these collaborations.

For third-sector organizations

Philanthropies have played an essential role in advancing educational opportunity in the US.⁶¹ From abolitionist efforts to supporting schools for Black children and adults in the wake of the Civil War⁶² to the efforts of the Carnegie Foundation to bring order to the education sector in the early twentieth century⁶³ to the role of private foundations like Ford and Rockefeller in shaping the Cold War academy,⁶⁴ philanthropy has long influenced the entire educational enterprise.

Today, foundations such as Gates, Lumina, and Walton continue to play key roles in supporting education, but their investments are overwhelmingly targeted toward Americans under the age of 25. In this new map of life, where learning happens throughout adulthood, philanthropy can do much to encourage and direct positive change. We encourage philanthropies to:

- 14.** *Promulgate a national conversation about how investments in early childhood and lifelong learning can be mobilized as a civic project.* This will require contributions and cooperation from government, employers, legacy schools, and new providers. All of them are essential for fulfilling the promise of education to equitably ensure healthy and productive longer lives.
- 15.** *Make targeted investments to encourage education and learning across the entire life course.* Philanthropies tend to invest heavily in education from ages 0-20, but in a New Map of Life, philanthropies need to invest in education across the entire life course. They have a lot of power to change the cultural script so that learning becomes recognized as a lifelong endeavor.

¹ In 2006, 25-year-old men without a high school diploma had on average a life expectancy 9.3 years less than those with a bachelor's degree or higher; women without a high school diploma had a life expectancy 8.6 years less than those with a bachelor's degree or higher. See figure 32 in U.S. Department of Health and Human Services, National Center for Health Statistics, "Health, United States, 2011: With Special Feature on Socioeconomic Status and Health" (Hyattsville, MD, 2012), <https://www.cdc.gov/nchs/data/abus/abus11.pdf>. For more discussion on the link between education and longevity, see Anne Case and Angus Deaton, *Deaths of Despair and the Future of Capitalism*, (Princeton, NJ: Princeton University Press, 2020).

² Kasim Allel et al., "Healthy Retirement Begins at School: Educational Differences in the Health Outcomes of Early Transitions into Retirement," *Ageing and Society* 41, no. 1 (2019): 1–21; David M. Cutler and Adriana Lleras-Muney, "Understanding Differences in Health Behaviors by Education," *Journal of Health Economics* 29, no. 1 (2010): 1–28; Rita Hamad et al., "How and Why Studies Disagree about the Effects of Education on Health: A Systematic Review and Meta-Analysis of Studies of Compulsory Schooling Laws," *Social Science and Medicine* 212 (September 2018): 168–78; Rita Hamad et al., "Educational Attainment and Cardiovascular Disease in the United States: A Quasi-Experimental Instrumental Variables Analysis," *PLoS Medicine* 16, no. 6 (2019): 1–19; James S. House, Paula M. Lantz, and Pamela Herd, "Continuity and Change in the Social Stratification of Aging and Health Over the Life Course: Evidence From a Nationally Representative Longitudinal Study From 1986 to 2001/2002," *The Journals of Gerontology: Series B* 60, Special Issue 2 (2005): S15–26; Michael Hout, "Social and Economic Returns to College Education in the United States," *Annual Review of Sociology* 38, no. 1 (2012): 379–400; Anne Jamieson, "Higher Education Study in Later Life: What Is the Point?" *Ageing and Society* 27, no. 3 (2007): 363–84; Ichiro Kawachi, Nancy E. Adler, and William H. Dow, "Money, Schooling, and Health: Mechanisms and Causal Evidence," *Annals of the New York Academy of Sciences* 1186 (2010): 56–68; Ye Luo and

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³ Ellen R. Meara, Seth Richards, and David M. Cutler, “The Gap Gets Bigger: Changes in Mortality and Life Expectancy, By Education, 1981–2000,” *Health Affairs* 27, no. 2 (2008): 350–60.

⁴ Case and Deaton, *Deaths of Despair*.

⁵ Settersten, Richard A, and Barbara Schneider. “The Future of Higher Education: What’s the Life Course Got to Do with It?” In *Handbook of the Sociology of Education in the 21st Century*, edited by Barbara Schneider, 457–71. Springer International Publishing, 2018. https://doi.org/10.1007/978-3-319-76694-2_20.

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