
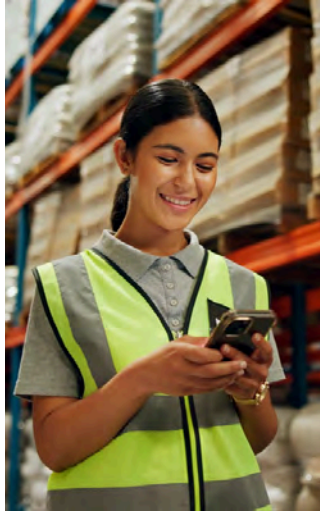






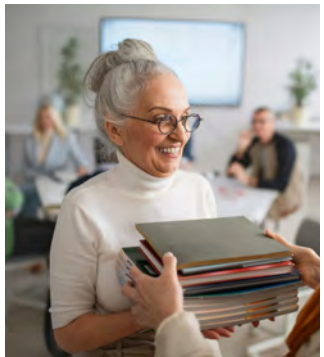

Building a Learning Society

Design Principles for
Human-Capital Investment
2025 - 2035

Futures Project on Education and Learning for Longer Lives
September 2025

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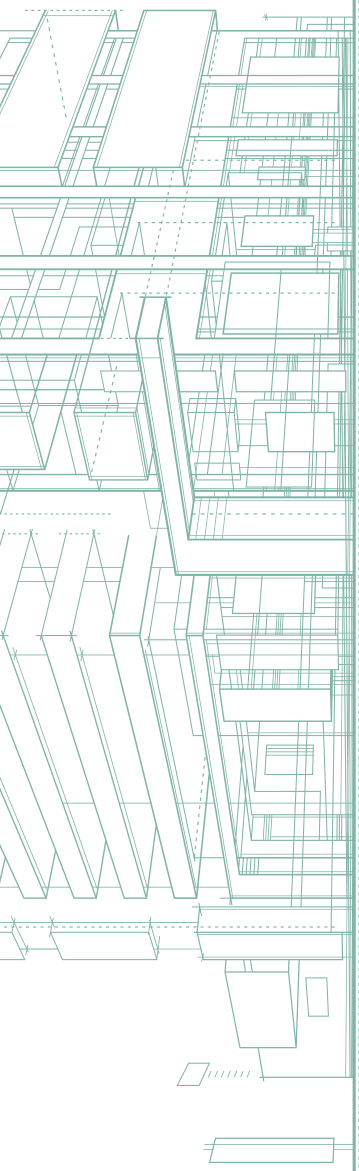
About the Stanford Center on Longevity

The Stanford Center on Longevity (SCL) is an interdisciplinary research center that engages more than 100 faculty across Stanford's seven schools. Directed by Stanford psychologist Laura Carstensen, it serves as an intellectual hub for researchers interested in longevity and long-living societies.

In early 2024, SCL launched a series of Futures Projects to develop insight on policies and practices that can support century-long lives. Futures Projects convene members from within and outside of the academy and, over the course of a year, generate both academic writings and opinion pieces that contribute evidence-based ideas to societal dialogues. Futures projects are meant to help realize SCL's groundbreaking New Map of Life initiative, which challenges outdated models of education, work, and retirement.



Executive Summary

People have always been the backbone of the American economy. Yet as technology and machines — unencumbered by pesky mortal frailty and human agency — become more advanced, many are beginning to wonder: what will happen to us? How will people flourish in the next decade and beyond?

Despite today's staggering speed of technological progress, our future prosperity requires something out of the history books. Throughout every period of major technological change, America has responded with investment in human talent.

Universal mass schooling for children coincided with the great wave of industrialization, urbanization, and immigration around the turn of the last century, which brought unprecedented economic growth. World War II, the subsequent Cold War, and the nuclear/scientific race with the Soviet Union coincided with a dramatic expansion of higher education. That investment in human capital is directly correlated with the explosion of microcomputing and the invention of the internet during the third industrial revolution.

Today we carry supercomputers in our pockets. Depending on who you ask, artificial intelligence (AI) promises to revolutionize or jeopardize nearly every industry. But the investment in human talent that has accompanied past technological change has yet to materialize for this current wave. Anxiety, rather than optimism, is the tenor of the current moment.

It's time to turn that corner and remember that the arc of history bends upward when America invests in people.

In October of 2024, the Stanford Center on Longevity (SCL) convened thought leaders to frame what the next chapter of investment might look like. Doers and thinkers from across higher education, the workforce system, K-12 education, philanthropy, edtech, healthcare, organized labor, and venture capital assembled multiple times to discuss, debate, and ultimately produce a vision for human-capital investment in the United States today.

In this publication we share two imperatives to meet the current moment; explain the transformative potential of moving from a schooled society to a learning society; and offer nine design principles to guide our progress.

Two Imperatives

For America to continue to be an economic and cultural leader on the global stage, we must fundamentally rethink how we approach the development of human capital. When we say *human capital*, we mean several things at once: the skills that people bring to labor markets, the capacities that fuel growth and self-discovery, and the everyday work of care that allows others to flourish.

Like any form of value, human capital can be hoarded, squandered, or invested so it grows. If longer lives are to be more prosperous, equitable, and fulfilling, we will have to steward all three dimensions with more intention. We are motivated by two imperatives:

1. **Equip Americans for the future of work.** Advances in digital connectivity, computational capacity, and AI are reorganizing divisions of labor in virtually every domain of human activity. Reports come almost daily about the astonishing pace of change and potential scale of AI-driven displacement of tasks long requiring the application of human skill. American workers deserve the capacity to prosper in the new world of work these changes are already bringing.

2. **Enable opportunity.** Stalled economic mobility in the United States has made the American Dream more of a fantasy than a real possibility for millions of Americans. Rising college costs, the "paper ceiling," mass incarceration, and subsequent discrimination in labor markets all contribute to uneven opportunity. As a result, the United States squanders incalculable stores of human talent. Enabling more and more equitable opportunity will benefit families currently being left behind and enhance the strength and resilience of the entire economy.

Moving From a Schooled Society to a Learning Society

Equipping Americans for the future of work and better enabling opportunity can't happen without systemic change:

America must transform from a schooled society to a learning society.

Across two centuries, the country met technological advancements by investing in people. Local schools and practical colleges accompanied the growth of early industry. Universal schooling for children grew alongside national infrastructure and mass manufacturing. After World War II, federal policy opened college to millions and helped fuel the development of electronics and networked computing.

Those investments in people created what scholars call a *schooled society* — a world organized around the institutions, rhythms, and credentials of schools. Building a schooled society enabled us to approach universal literacy and numeracy, which supported broad economic prosperity and a healthy civic life.

But it also established a presumption that people should spend the first decades of their lives in big bureaucratic organizations accumulating school certifications, the middle decades working, and the final decades in retirement. That presumption has led to a credential trap, with degrees serving as gatekeepers to economic opportunity.

The schooled society devalues learning that happens outside classrooms, overlooking the crucial skills developed through work, volunteering, caring for others, and life experience. The schooled society creates a fairly rigid conception of the life course, overly prescribing where and when learning best happens.

The fourth industrial revolution is reshaping work as we know it, but our strategy for human-capital investment remains defined by schools and their credentials. We still organize learning investments almost entirely around schools and expect people to pursue life paths in which the bulk of human-capital investments precede entry into the labor market. Meanwhile, employers use degrees as crude proxies for ability. Conventional accounting practices define workers as costs to be minimized, not investments to be nurtured.

Moving beyond the schooled society requires, first, distinguishing schooling and learning. *Schooling* refers to formal education leading to credentials. *Learning* means acquiring capabilities and skills — regardless of where and how that acquisition occurs. A learning society would:

1. Recognize and reward learning wherever it happens — workplaces, communities, homes
2. Distribute human capital investment across many institutions, not just schools
3. Support multiple career and life transitions throughout the life course
4. Enable fluid movement between learning, work, and caregiving activities

Rather than a prescribed sequence of school-work-retirement, in a learning society people would cycle through different priorities: sometimes focusing on learning new skills and capacities, sometimes on paid work, sometimes on caring for others or personal development. A learning society would be organized so that people would not have to make choices between working for pay, investing in themselves, and caring for loved ones.

Nine Design Principles for Building a Learning Society

Moving from a schooled society to a learning society will require collaboration, innovation, and policy change. The following design principles might serve as starting points to guide that change.

1. **Schools are essential for learning and civic life.** Schools will continue to be indispensable institutions in American life, but they will adapt to the demands of a learning society. They might become civic hubs, assembling a wide variety of learning tools and experiences from many providers while anchoring learning opportunities in particular communities. Professional educators will evolve as well into learning designers, mentors, and guides.

2. **Credentials are means, not ends.** A wholesale commitment to credentialing has encouraged educators, philanthropists, and politicians to make progress on a few numbers (e.g., graduation rates, time to degree), rather than actual human learning, capacity for employment, and the ability for people to make informed decisions about their own lives. We encourage a national commitment to specify and build measures for outcomes that matter: agency, mobility, and resilience, for example.

3. **Design for change across longer lives.** Learning will still be prioritized in the first two decades of life, but it will not stop there. Longer lifespans and technological change mean that people will continually learn and flexibly adapt to enable different kinds of work over time.

4. **Build infrastructure for caring.** Normalizing the presumption that learning happens across the life course will require reconfiguring our approach to work so that paid employment, learning, and caring for others can be truly simultaneous and complementary.

5. **Working is learning.** The best learning happens by doing, typically on teams and alongside others more experienced. A learning society encourages work-based learning models; builds a cumulative science to better identify, instrument, and measure returns to these models; and sustains social policy to encourage and reward learning in workplaces, schools, and civil society.

6. **Build an economics of learning.** A learning society will be well served by a social science which recognizes that learning happens in every social sector; instruments learning in these sectors for measurement; and models costs and returns to learning for individuals, organizations, and society.

7. **Think carefully about skills.** Instead of vague calls for a greater focus on skills over credentials, we might parse what we mean by "skills" into three components: enduring capacities, time-bound abilities, and practiced craft. Regardless of the terms we use, being precise about the human assets we are trying to nurture will better enable us to design learning opportunities effectively.

8. **Design for transitions.** Today the burden of managing transitions and the risks associated with them fall to those experiencing them. Derisking and supporting transitions will foster adaptability and resilience for people, organizations, and the overall economy.

9. **Make the learning society a joint venture.** All of us can participate: investors, entrepreneurs, policymakers, philanthropies, employers, technology companies, and legacy schools.

What's Next

The American Dream feels increasingly out of reach for millions. Traditional institutions that once enabled upward mobility have weakened as the social contract between government, business, and citizens has eroded. While individuals now bear responsibility for their own economic prosperity, most lack adequate resources to invest in their futures and information about how to invest wisely. Rather than creating opportunity, technological change feels like another threat pushing the American Dream further away.

Previous generations show us the way forward. In the past, American innovation has created shared prosperity when leaders boldly invested in people. This approach generated incredible economic growth and national pride throughout the last century.

We need to take another audacious leap. We need to build a learning society that distributes learning opportunities more broadly across time, places, and people — one that recognizes, measures, and rewards learning wherever it happens, sharing the investment burden among all who benefit.

The nation has everything it needs to build a learning society: human talent, financial resources, and organizational capacity. To break new ground, though, we need a shared vision of what the future might look like and collaborative, cross-sector relationships that enable us to get there together. Establishing these relationships and developing shared language, progress metrics, and mutual trust are essential next steps.

This full report describes the **Learning Society** vision in more detail.

Introduction

Every major epoch of technological change in American history has been met with a deep investment in human talent. A first great wave of industrialization was matched with universal mass schooling for children. The Soviet Union's successful launch of the *Sputnik* satellite into Earth's orbit spurred a scientific space race and a vast expansion of college access.

The current wave — handheld supercomputers that instantly connect us to a universe of knowledge, internet platforms that allow us to build relationships with strangers, and AI that finishes our sentences — has yet to receive a similar commitment. For generations, it has been people, not machines, that have made the United States the envy of the world. Americans are living longer than ever before, and they are worried about how their additional years will unfold. How can we ensure that people continue to prosper and flourish into the future?

Today the nation faces a paradox.

One of our greatest civic achievements — a commitment to schooling — has become a limitation.

Our embrace of a certain approach to learning has led us to front-load investment in people into the first two decades of life and allow it to trail off later on. It has segmented the life course into separate phases devoted to learning, work, and leisure. It has elevated the importance of school credentials over experience, persistence, or demonstrated skill as markers of human talent. However well-intentioned, our commitment to schooling in specific forms and phases of life has limited our imaginations about how, when, and where human potential might best be nurtured and realized.

Meeting the human-capital demands of our time will require breaking free from school models to make lifelong, flexible, and inclusive learning our next great investment in people. The good news is that recent technological advances, combined with ingenuity and an entrepreneurial spirit, can provide the tools to move beyond the constraints of a schooled society. Together, we can build a learning society, one where learning happens not just in classrooms, but also at work, at home, and at play — across the entire arc of our increasingly longer lives.

The learning society is already under construction. We can see glimpses of it in innovative programs and experiments nationwide. Yet we are far short of the coherent vision and civic and business infrastructure that truly transformative change requires. The task now is to build the foundation of a learning society, frame it thoughtfully, and ensure that the many necessary efforts are aligned, cumulative, and inclusive.

Americans are living longer and increasingly can anticipate longer stretches of functional health. In 1920, the average lifespan in the United States was around 55 years. Revolutionary advances in the medical sciences and public health over the last century dramatically extended the typical lifespan, which now approaches 80 years and continues to grow.

For everyone to benefit from longer lives, we will need to create new pathways for mobility in education and employment. We will need to prepare ourselves to navigate multiple transitions across jobs and careers across an extended lifespan.

We will need to think differently about the pace, rhythm, and sequencing of education, paid work, and care of loved ones; and to save and plan for longer lives. Employers will need to rethink how they source, grow, and retain talent. Schools, colleges, and universities will need to continually adapt their offerings in light of ongoing changes in the character of work and everyday life. All levels of government will need to develop entirely new ways of supporting talent across every domain of life and throughout adulthood. A life-course approach, which recognizes the cumulative returns on investments in human capital from birth through late life, will be essential to any forward vision of national prosperity.

By *human capital*, we refer to several things at once: the skills human beings offer to employers in labor markets; the capacities that enable personal growth and self-discovery; and the many tasks and talents entailed in attending to the care and flourishing of others. Like other forms of value, human capital can be hoarded, squandered, or strategically invested so that it grows. Enabling longer lives that are more prosperous, equitable, and fulfilling in our time will require better shepherding of human capital on all of these dimensions.

This document is the second milestone in an ongoing conversation convened by the Stanford Center on Longevity (SCL) in 2024-2025 to consider what the next chapter of national investment in human talent might look like. Starting in October 2024, 33 thought leaders met to consider the education and learning opportunities that America might build to enable its people to enjoy growing prosperity in the next decade.

This group of thinkers and doers from higher education, the workforce system, K-12 education, philanthropy, edtech, healthcare, organized labor, and venture capital convened multiple times over the course of a year to discuss, debate, and ultimately frame a vision for human-capital development in the United States in the present moment. Our work is intended to encourage a national conversation about how best to develop, support, and celebrate human potential in the immediate years ahead.

In what follows, we first specify two imperatives for change that the nation must meet if it is to continue to hold world leadership in economic prowess, civic vitality, and social mobility — to equip Americans for the future of work, and better enable opportunity.

We then recount a major national accomplishment of the last century — our creation of a schooled society, in which all people were promised access to formal education during the first two decades of their lives. This accomplishment was essential to America's rise to global eminence in previous generations. Yet the assumptions, organizational arrangements, and material costs of the schooled society now limit our imaginations toward better and more flexible ways of investing in people.

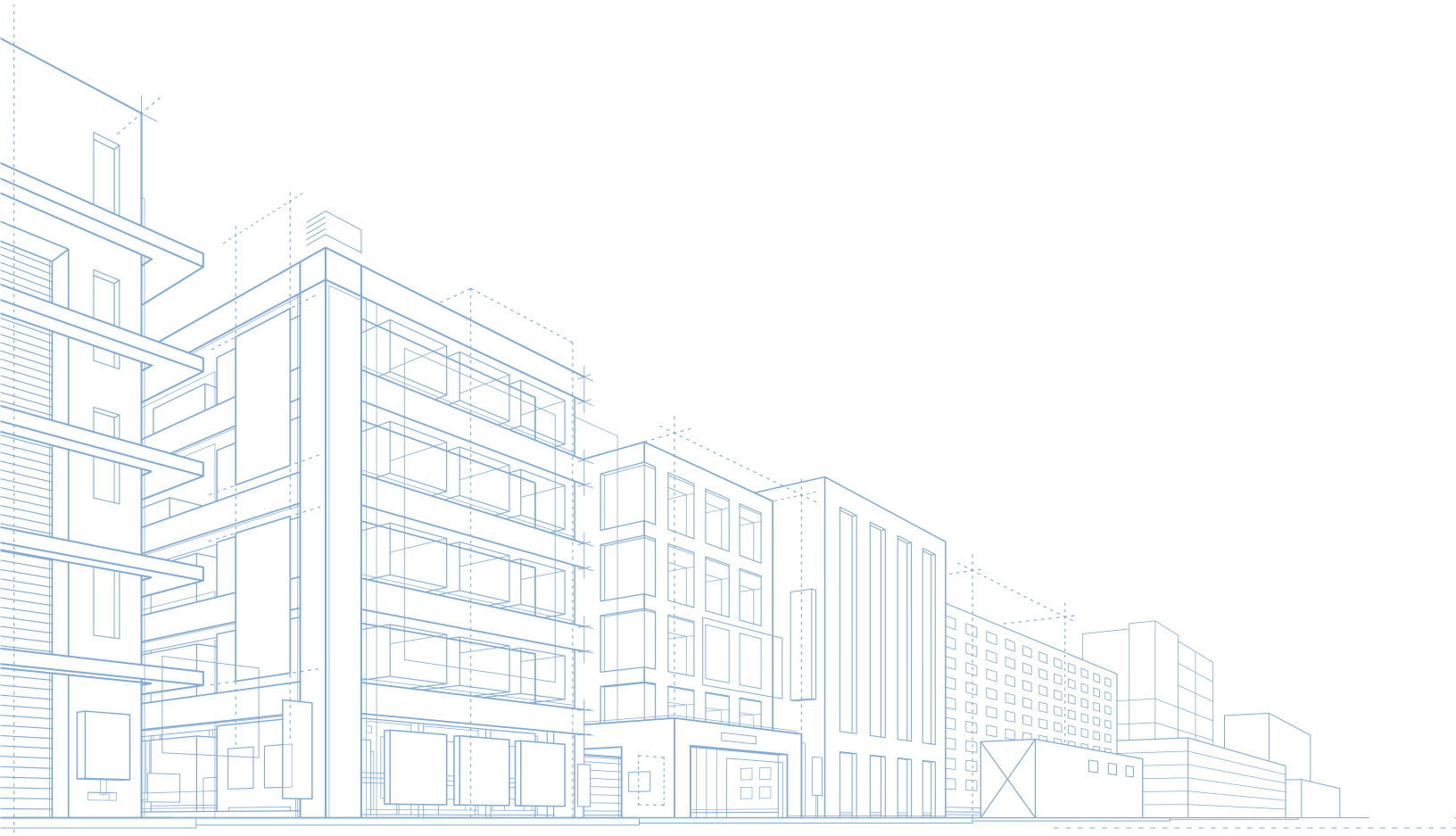
From there we argue for using the schooled society as the foundation on which to build a learning society. In the learning society, talent development is encouraged, recognized, and rewarded wherever in our lives and whenever in the life course it occurs. In the learning society, workplaces and households are honored alongside schools as sites of learning. Learning opportunities are offered by a wide array of providers in a continually evolving marketplace that is simultaneously civic and entrepreneurial.

We conclude by specifying nine design principles to guide applied research, innovation, entrepreneurship, private investment, corporate practice, and public policy in the service of building a learning society.

We recognize that our vision is ambitious, and that we are only a few among many who are working to shape the future of learning in the United States. The scale and diversity of our country have always supported experiments and innovations for how best to invest in people. This is a priceless national asset.

But our nation is at its best when its scale and diversity add up to more than a collection of disconnected efforts: when business leaders, philanthropists, educators, and government leaders come together around shared goals. We do not achieve moonshots or win wars when we are disunited.

Building a learning society can be our next shared frontier.



Two Imperatives

The case for a major rethinking of how the nation builds and sustains human capital is urgent. Daily newsfeeds remind us of the breakneck rate of development in AI and its myriad workplace applications; of the vast sums of money being spent by other countries to be at the forefront of tech development; of the financial fragility of America's public retirement and health-insurance systems; and of the modest or nonexistent retirement savings of the majority of U.S. households.

One need not be a futurist or fortune-teller to see that now is the time for a new strategy to sustain human talent. We see two imperatives for change: equip Americans for the future of work, and enable opportunity in new ways.

Equip Americans for the Future of Work

There is no shortage of evidence that massive technological changes are transforming the character of work. Some call it the fourth industrial revolution, or 4IR. Dramatic advances in digital connectivity, computational capacity, and AI are reorganizing divisions of labor in virtually every domain of human activity. 4IR already has transferred to machines myriad tasks that long required human workers.

These changes will only accelerate in the near future. Reports come almost daily about the astonishing pace of change and potential scale of AI-driven displacement of tasks long requiring the application of human skill.

Changes in the demography and culture of the United States are additional incentives to invest in workforce talent over longer stretches of the life course.

The huge cohort of Americans born between 1946 and 1964 — the so-called Baby Boom — is now retiring, and smaller subsequent birth cohorts mean fewer younger workers will be available to replace them. While this fact alone has already affected the availability of workers, it is exaggerated by generational changes in attitudes toward work. Baby Boomers came of age in an era of highly competitive labor markets and the wholesale entry of women into paid employment. Together, these changes encouraged a culture that prioritized life orientations toward paid work and career advancement over other values. A post-COVID world of plentiful jobs, and a general cultural recalibration of work-life balance, have encouraged many people to renegotiate their relationship to paid work. A recent Lightcast study anticipates a net deficit of millions of workers in coming years that will need to be filled by immigration, offshoring, and retention and retraining of those adults who wish to remain in the labor force.

Enable Opportunity

Stubbornly modest rates of economic mobility in the United States have undermined the promise inherent in the American Dream: that hard work and perseverance are rewarded by rising prosperity over the life course and across generations. Many factors combine to sustain this problem: unequal community circumstances for Americans of different class and racial groups in the first years of life; steadily rising out-of-pocket costs for postsecondary education; labor markets which discriminate against people without four-year college degrees; high rates of incarceration, especially for Black men, and the joblessness and wage scars that come with criminal records.

Systemic practices in education and employment additionally hinder opportunity. The country is finally beginning to reckon with the high cost of tying so much economic and moral weight to four-year college degrees. Careful reconsideration of the bachelor's degree as a near-universal entry requirement to well-compensated, career-laddered jobs is an important first step — a recognition that educational credentials should serve as ladders for mobility, not "paper ceilings" that block it. Yet reviewing educational requirements for employment alone will do little to change entrenched practices of recruitment, screening, and promotion organized around college credentials.

Expanding avenues for economic opportunity in recruitment, hiring, and promotion will require deep changes in how employers identify and reward human capital. Multiple states are supporting employers to use other mechanisms to evaluate job candidates, such as digital wallets and marketplaces that match applicants to employers on the basis of skills rather than traditional credentials.

These efforts suggest the promise of reconfiguring hiring practices around new information repositories and technical tools that are less rigid and more dynamic than the twentieth-century credential economy.

The vast and varied landscape of corporate America offers a sort of field test in just how much employers can do to either enable or inhibit mobility in the workplace. The American Opportunity Index (AOI), a joint venture between the Harvard Project on Workforce and the Burning Glass Institute, traces the career trajectories of some five million workers in the nation's largest firms. It shows that employers differ substantially on factors that are implicated in who has access to jobs and mobility. How often do firms hire and retain people without college credentials? How much internal mobility and earnings growth do retained workers enjoy? How likely are employers to promote from within? AOI data indicate substantial differences on such dimensions, even among firms within a single industry — suggesting a very strong role for employers in shaping opportunity. Mid- and late-career employees have a strong need to signal the skills attained through their long working experience, but these skills are rarely acknowledged nor documented.

Enabling opportunity will also require change in the organization and compensation of care work in America. By *care work*, we refer to the many tasks involved in serving the health, well-being, and prosperity of others. Wherever it is performed — in homes, childcare centers, schools, assisted living facilities and nursing homes, community agencies, hospitals, or places of worship — care work is chronically underpaid and very demanding of the time and attention of those who perform it. Millions of us face the difficult path of attending to the essential human needs of loved ones while also pursuing paid employment or school. Reorganizing the relationship between care work, paid work, and learning to facilitate this path is essential for truly shared prosperity.

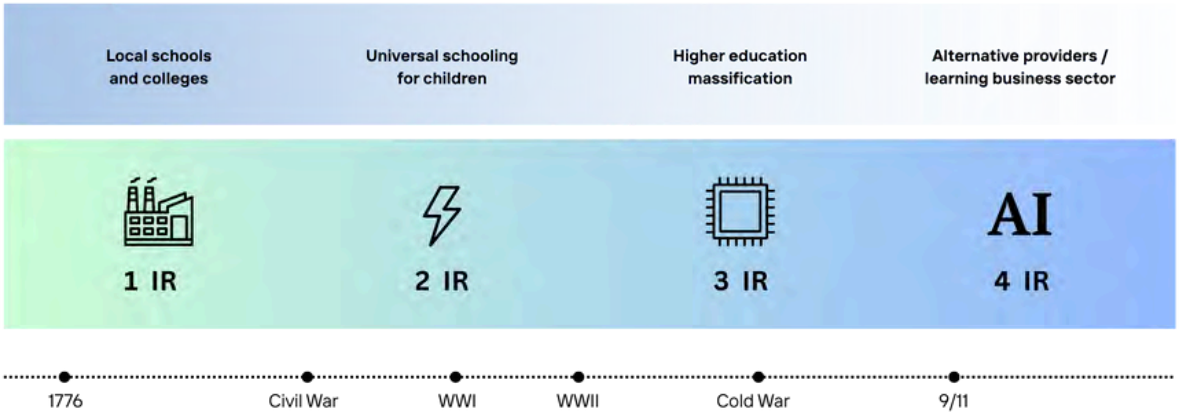
Schools, systems of caregiving, government agencies, legal/carceral systems, civic organizations, and employers all influence how opportunity is distributed in American life. All of them must be enlisted in a forward vision for human-capital development.

The Schooled Society and the Learning Society

The expansion of schools and schooling has long been our nation's strategy for investing in people. While this may seem obvious — what are schools for, if not for growing human capacities to meet changing times? — it is in fact a relatively recent idea.

The history of the United States is in many ways a history of adaptation to technological change. We can summarize this complex story with a heuristic of four industrial revolutions and four epochs of human-capital investment.

Figure 1: Four Industrial Revolutions and Educational Provision in U.S. History



The United States was founded at the dawn of the first industrial revolution, which witnessed early mechanization of agriculture and manufacturing, the growth of cities, and increasing economic specialization. What the Founding Fathers imagined as a nation of yeoman farmers in 1776 would in the space of three generations become a steadily industrializing and urbanizing society. The harnessing of inanimate power (water, coal) and huge private and public investment in what geographers call *infrastructure* — dams and canals; railroads; postal services; the telegraph — created conditions for an entrepreneurial economy that sprawled across a vast continent. It is no accident that in the first century of the nation's life, Americans founded hundreds of local schools and colleges to equip its people with the basic numeracy, literacy, and technical know-how to support the flourishing of business and civic enterprise. Even so, during this period formal education in schools and classrooms was a luxury available only to a relative few.

That would change during the second industrial revolution, spanning roughly from the Civil War to WWI, when the United States saw advances in all aspects of technology — manufacturing, transportation, communications, and bureaucratic organization.

Economic growth drew serial waves of European immigrants and rising anxiety among incumbent national leaders about how an increasingly diverse America might remain unified and governed. This is the context in which U.S. business and civic leaders embarked on the project of universal mass schooling.

The United States was among the first nations in the world to commit to formal education for all children. Especially remarkable is that it happened here: in a country famously skeptical of big government and central planning. In fact universal schooling in America was diffusely distributed and grassroots. Those who accomplished it were often ardently religious people, who saw in schools a way to shape hearts as well as minds. Newly emancipated African Americans viewed schooling as a path to freedom, community empowerment, and fuller social inclusion. Ambitious businesspeople recognized that good schools and colleges could distinguish towns and regions, making them more attractive for settlement and investment.

That every state ultimately enshrined the right to basic schooling in its laws is testament to the great faith Americans place in the promise of providing learning opportunities to everyday people.

This civic investment reaped incalculable rewards. It laid a strong foundation for ongoing economic development and technological innovation. Universal literacy and numeracy meant that millions of people were capable of contributing to a growing white-collar sector, and pursuing advanced learning to develop the machines, manufacturing processes, and financial instruments that would become the basis of corporate capitalism. It also made good on the Founding Fathers' dream that everyday Americans be equipped with the skills of discernment necessary for democratic self-governance.

All of this was accomplished with relatively minimal regulation or investment from the federal government. State legislatures and local governments, working in tandem with regional business, religious, and philanthropic leaders, were the primary funders and agents of the education provided to children before WWII.

American entry into WWII and the subsequent Cold War brought further incentive for investment in formal education. This is when the federal government became a major player in education funding. The Servicemen's Readjustment Act (popularly known as the GI Bill, 1944), the National Defense Education Act (1958), the Elementary and Secondary Education Act (1965) and the Higher Education Act (1965) transformed college access from a rarefied choice of the privileged few to a national goal, realizable for millions.

Again, the benefits to the nation were incalculable. The mass expansion of college access laid the foundation for further transformative technological change: the third industrial revolution, which transpired in the last quarter of the twentieth century, included the harnessing of nuclear energy and the creation of electronics and programmable computing. The fourth industrial revolution has unfolded in our lifetimes: the near-ubiquitous application of the internet and the maturation of AI.

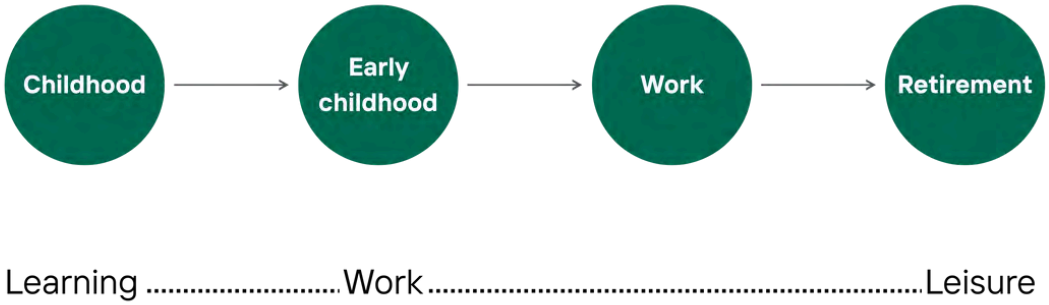
The nation's colleges and universities, and their legions of scientists and engineers, were essential features in these developments. Payoffs to that national investment have gone far beyond the technical and scientific. That millions were able to experience higher learning brought great fertility to the cultural, artistic, and civic life of the country. People became more self-directed, curious, and cosmopolitan than ever before. Figure 1 illustrates how the nation's largest investments in schooling overlapped with the second and third industrial revolutions.

Universal mass schooling for children coincided with the great wave of economic expansion, urbanization, and immigration around the turn of the last century. The explosion of microcomputing and the internet during the third revolution are tied directly to the great wave of capital invested in college and university education during the decades immediately following WWII. Social scientists have a pithy term to describe the world which all of that investment created. They call it the schooled society. Its big consequence is that virtually all of life is structured by the organization, culture, and credentials of schools.

Facing the Limits of the Schooled Society

Consider that the life course itself is organized into stages defined by people's relationship to school. We talk about early childhood and preschool education, elementary-aged children, high schoolers, and college-age youth. All that schooling creates expectations about where learning best occurs — in schools: not at home, not at play, not at work. There are expectations, too, about when learning happens: during the first two decades of life, in advance of entry into full-time employment. Most of us have been taught to imagine that our own lives should follow the sequence illustrated in Figure 2, with a period of schooling taking place from birth to young adulthood, at which point we leave school to begin our paid working lives, then retire.

Figure 2: Imagined Life Course in the Schooled Society



Jobs, labor markets, relationship networks, and indeed the entire economic and civic order have come to be defined by the rhythms and certifications of schools. In 1965, fewer than 15 percent of adults between the ages of 25-29 had four-year degrees. Well-compensated jobs, often protected by politically powerful labor unions, were commonly available in manufacturing industries from coast to coast, especially for white men.

Whether in industry or at college, young people were encouraged to pursue specific occupations that would encompass their entire careers, perhaps within a single firm. Those careers were presumed to end with eligibility for Social Security benefits as workers entered their seventh decade of life, and (for relatively privileged workers) were routinely supported by employer-funded pensions.

It is during this period that state and federal governments built funding schemes and agency structures dividing public support for human-capital development into separate and unequal domains.

One was called *education*. It received the lion's share of public investment that was channeled to omnibus support for K-12 and postsecondary schools, organized around ideas of fostering equality and efficiency of student progress around credential attainment. The education domain enjoyed the prestige associated with positive investment in young people. It also received the majority of attention from academic researchers, whose own jobs at universities were part and parcel of the education enterprise.

The other was called *labor*. It became associated with services for the manufacturing workers most likely to be represented by labor unions and the "heavy" industries that experienced the first waves of overseas capital migration. The labor side received much less public subsidy and academic attention. The distinction itself created a paradoxical chasm between "education" and "labor" policy and research, as if any functional economy could have one without the other.

Within the space of a mere 40 years, the national labor market was transformed by credentialism: systematic preferences in hiring and promotion on the basis of college degrees.

This transformation was driven partly by fundamental changes in the economy, and partly by ideas and incentives of human-capital investment baked into the schooled-society model. The globalization of industrial manufacturing eliminated millions of union-protected manufacturing jobs from the continental United States. A growing emphasis on shareholder value over corporate stability encouraged a renegotiation of the social contract between employers and workers. Firms made fewer long-term commitments about employment and pensions, creating ever more transactional, short-term orientations to work on both sides of the employment relation. These changes mean that stable, career-laddered employment is increasingly found primarily in domains of the labor market that are gated by requirements of college degrees: white-collar professional, technical, and service occupations.

Preferences for college credentials in hiring and promotion are legal forms of discrimination in the schooled society. This has been a huge boon to colleges and universities, which are in the business of selling what have become nearly essential components of financial security across the life course. Discrimination on the basis of school credentials might make sense when those credentials are transparent representations of the skills and capacities of those who possess them.

But in the United States, credentials are tied directly to demonstrated skill in only a few carefully regulated occupations such as medicine and law. In most employment situations, degrees are only opaque proxies of human capacity. Yet school credentials have huge consequences for economic opportunity, mobility, and overall quality of life in this country. Possession or non-possession of a four-year diploma now substantially shapes life chances: for lifetime earnings, financial security in retirement, and physical and psychological well-being. Credential attainment also does much to determine those with whom we fall in love and have children.

By the second decade of the current century, the schooled society and its attendant credentialism had abetted the creation of two very different experiences of American life. Those who live in one of them could reasonably expect to enjoy stable, well-compensated, career-laddered employment; have access to healthcare; and retire in relative security. Those in the other could anticipate financial and physical insecurity throughout their adult lives.

For many years the presumed answer to this problem was to expand access to college and to make college completion more efficient and affordable. Yet decades of effort by philanthropy and government have brought very little fundamental change in how education is funded and provided. Americans never committed to full public subsidy of any education beyond high school, so steadily growing demand has been sated by people paying for college out-of-pocket and relying on loans to cover the rest.

Education debt has metastasized into a $1.6 trillion national crisis, with no shared understanding about who is responsible for the problem or how it should be remedied. Massive changes in digital technology offer the promise of reducing the cost of instruction via online platforms, yet any substantial bend in the college cost curve has yet to arrive. Stubbornly tepid completion rates round out the unhappy picture, with only around 65% of those seeking four-year diplomas completing them within six years.

Even if the waving of magic wands were to radically lower college costs and raise completion rates, we still would not be sufficiently prepared to sustain work and prosperity across longer lives. This is because the entire project of school expansion in the last century was designed to front-load formal education into the first portion of the life course, and to prepare people for career trajectories within relatively stable sectors of the economy.

The schooled-society logic has encouraged us to define learning through young adulthood as a sorting and stratifying process. Schooling places people on paths into specific segments of the labor market, where they are presumed to stay for the rest of their working lives. This system is no longer feasible, let alone optimal.

Economists concur that the fourth industrial revolution will dramatically reconfigure the conditions of work in the coming years. While it is impossible to predict the future, we can recognize from past waves of technological change that the basic terms of the labor relation — what people do for pay, how they do it, and the structure of its compensation and governance — will be in flux. The United States leaned into the second and third industrial revolutions with resolute ambition — even optimism — by making huge investments in people. Thus far, however, the fourth industrial revolution awaits its enthusiastic national response.

News media warn almost daily of coming tidal waves of economic change, yet the schools, educational policies, and funding models we inherit remain largely as they were half a century ago.

Employers still rely on schools to deliver young employees with credentials they use as proxies — not measures — of capacity and skill. Employers' in-house learning and development initiatives often focus on young talent and leave mid- and late-career employees behind. Prevailing accounting protocols encourage firms to count labor as a cost, not an investment; this leads to equating more mature workers with higher salaries as hindrances to profit margins rather than human-capital assets.

Meanwhile, the majority of public investment in human-capital development continues to flow into schools that look and feel much as they did when our parents were in high school, and are organized around preparation for college entry. Two-year associate and four-year bachelor's degrees are conferred on the basis of how many hours students spend sitting in classrooms.

Cultural inertia is hardly the only problem of the schooled-society model. It also radically diminishes the visibility and value of learning that happens outside of schools. This is true even though virtually all of us recognize from our own experience that meaningful learning happens everywhere, and especially "on the job" of paid or volunteer or care work, where our capacity to cooperate with others in producing positive results has a clear bottom line for workers and supervisors alike. But schooled-society thinking discourages us to count or even measure such learning. This reality is clear to the millions of skilled and experienced people whose absent or dated school credentials stand in the way of employment or mobility.

A recent influential study called them hidden workers: desirable candidates that remain invisible to employers because of search, recruitment, and promotion routines and algorithms that eliminate them from consideration. Job descriptions that require specific educational credentials; recruitment protocols that return to the same sources over and over again; assumptions that young people will be more flexible than in-house employees; siloed internal job trees that discourage horizontal movement within firms — all of these conspire to "hide" incumbent talent from the very firms that claim to need it most.

Finally, the schooled society segregates the official site of learning from the rest of life in space and time.

When schooling happens at specifically designated times and places, people can opt in to school opportunities only by opting out of other commitments. This makes for perennial hard choices, perhaps most of all for women in poorly compensated occupations, who are forced to choose between caring for others, paying the bills, or investing in their own futures.

It is tempting to think that tinkering with the schools and educational strategies we have is the best way to prepare for the future. That would be self-defeating. Social scientists and historians have long understood that schooling has a *grammar:* ultimately arbitrary ideas about how education must work that are baked into the institutional architecture of the schooled society.

The grammar of schooling includes presumptions about classrooms and curriculums and testing and grading; about credentials and certifications and age segregation; about cost; and about when in the life course learning best happens. These ideas have proven resistant to even modest alteration, let alone the dramatic changes that may be required for Americans to flourish.

Yet there also is good reason for optimism about Americans' ability to create new strategies for investing in people. Although the grammar of schooling continues to constrain creativity and flexibility in legacy institutions, the last decade has also witnessed an explosion of entrepreneurial activity centered on building new platforms, technologies, and formats for learning. The same entrepreneurial spirit that brought us the schooled society is now fueling enormous growth in a burgeoning education business sector. The gifts of the fourth industrial revolution — a rapid rise in computational power, a revolution in AI, and the lowering costs of such tools — have created a flood of novel innovation to enduring problems of educational affordability and access.

New forms of private and philanthropic capital are supporting the development of tools and business models that many believe will transform education and learning as we currently experience them. The United States has seen steady growth in edtech funding, with $2.5 billion in venture capital committed in 2020 — more than double the amount in 2016. And even despite a substantial decline in education venture capital with the waning of the COVID pandemic, the World Economic Forum estimates that the global education sector will absorb $10 trillion in investment over the next decade.

Toward a Learning Society

There is a fresh way forward, and it begins by distinguishing schooling from learning. *Schooling* is the formal provision of education by organizations called schools, in formats that lead to credentials. *Learning*, by contrast, is the acquisition of capacities and skills. Schooling happens in designated places.

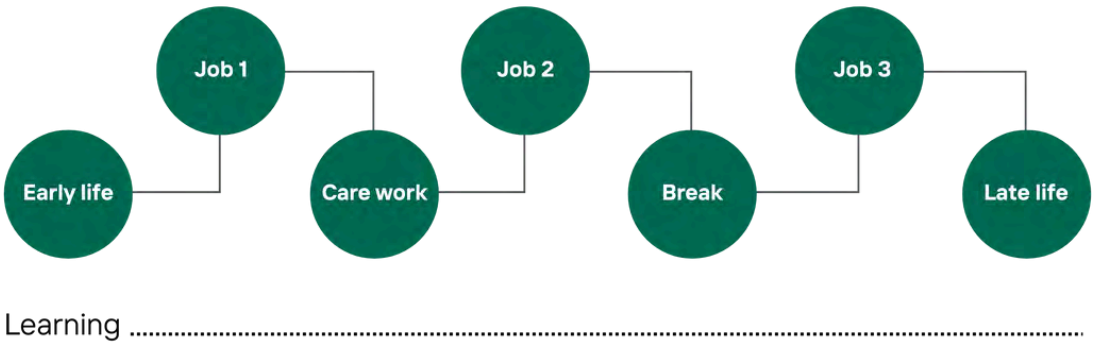
Learning happens everywhere — at school, at work, at home, and in the myriad organizations of civil society.

Schooling often relies on didactic instruction, while learning happens when people actively engage and deeply apply knowledge. Schooling can feel like something done to people, but learning happens when people make something their own. Once we recognize that continual learning across the life course is what matters — not the experience of schools or the attainment of school credentials — it becomes possible to imagine building a very different kind of human-capital enterprise. This enterprise would recognize that learning happens in every domain of life and across the entire lifespan. Its architects would build mechanisms to identify, observe, and reward learning wherever, whenever, and however it occurs. In contrast with the schooled society, which allocates the majority of investment in human talent to publicly subsidized schools, the learning society would recognize and incentivize the nurturing of human talent wherever it occurs, be it workplaces, civil-society organizations, or households.

The life course in the learning society is different from the one we now take for granted. In the learning society there is no presumption that education trails off at the end of childhood or that young adults should prepare for a single or even primary career. Instead, parents and educators in the learning society encourage young people to presume that they will learn throughout adulthood; that they will have multiple careers spanning several life stages; and that everyone needs to move fluidly between life stages that variably prioritize formal education, paid work, and care for ourselves and others.

Figure 3 provides one such possible new life course. In contrast with the static and linear life course imagined in the schooled society, the life course in a learning society is more episodic, with multiple anticipated transitions between the prioritization of paid work, care, and self-development.

Figure 3: A Possible Life Course in the Learning Society



Relieved of the constraining idea that learning happens primarily in schools, people and employers in the learning society take advantage of a universe of novel educational services available in an expanded learning marketplace. Many of these services are seamlessly embedded into the cadences of workplaces and entertainments such as games and other immersive virtual environments.

Government leaders in the learning society dispense with twentieth-century distinctions between education and labor policies, agencies, and budgets. Instead they organize policy, governance, and funding around the presumption that successful learning and a resilient workforce are one in the same. Enlightened employers recognize that workplaces are essential sites of learning, and that ongoing talent development benefits morale, resilience, and reputation as well as the bottom line. Legacy schools remain vital organizations, but they are reconfigured as hubs for the aggregation and delivery of learning opportunities and other human services from a complex ecology of providers.

These are hardly fanciful ideas. Early versions of them already have surfaced.

The internet has revolutionized access to information, knowledge, and myriad learning opportunities that would have been unthinkable a generation ago. The profound limitation of organizing access to high-quality jobs on the basis of possession of college degrees has become a widely recognized talent bottleneck, and an exploding education-technology sector is creating a steady flow of new learning tools and platforms to remedy it.

Yet the learning society will not come to fruition on its own. The inertial weight of the schooled society is part of the problem; so too is the non-cumulative, a-scientific character of innovation in the edtech sector; the data anarchy that obtains for any learning opportunities outside the purview of legacy schooling; the disincentives for employers to invest in ongoing talent development; and the profoundly unequal contexts in which children begin the the long arc of their learning lives. Overcoming these obstacles will require thoughtful investment, coordination, and design along nine dimensions.

Nine Design Principles for Building a Learning Society

The United States has ample technology, organizational capacity, capital, and human talent to meet the work-and-learning challenges of our time. While there is already a great deal of activity and investment in new forms of human-capital development, we lack shared vocabulary, metrics, and goals for coordinating investment nationwide.

In a country (and workforce) as vast, varied, and dynamic as the United States, attempts at human-capital master planning would be foolhardy and likely counterproductive. Instead we offer design principles for building a learning society that might inform distributed investment, entrepreneurship, organizational action, and policymaking.

1. Schools are essential for learning and civic life

Schools will continue to be indispensable institutions of American life, but their role must adapt to the demands of a learning society. While learning increasingly occurs in workplaces, homes, and civic spaces, schools remain one of the few institutions with a universal mandate to reach all children and youth.

They are not only places where foundational skills of literacy, numeracy, and reasoning are acquired, but also relational hubs where young people learn to cooperate, build empathy, and practice civic participation. Schools anchor communities, offering spaces for identity formation and shared belonging in ways that no digital platform or workplace can fully replace. Yet schools must also prepare learners for futures we cannot yet even imagine.

The School Superintendent Association (AASA)'s Public Education Promise: Future-Ready Framework emphasizes "New Basics" that extend beyond traditional literacies to include digital fluency, financial competence, AI literacy, and the social-emotional capacities that undergird adaptability, wellbeing, and civic engagement. It calls for education systems to evolve so that what schools teach, and how instructors convey it, keep pace with ongoing societal transformation.

This means shifting from static content delivery toward cultivating the flexible competencies required for complex, uncertain futures and increasing youth engagement through joyful, social, and relevant learning experiences that drive meaningful creative endeavors and foster adaptability. Educators will remain at the heart of this transformation, but their roles will continue to evolve. In an age where information is instantly available and AI can act as tutor or assistant, teachers' unique value lies in helping students navigate ambiguity, pose meaningful questions, and exercise sound judgment.

OECD research underscores that future-ready teaching increasingly requires educators to act as "learning designers" and mentors, guiding students in ways that cultivate agency and resilience rather than focusing solely on knowledge transmission. Teachers of the future will be less lecturers than coaches, advocates, and trusted guides.

At the same time, a forward-looking vision must recognize the central importance of the earliest years of life.

Neuroscience demonstrates that 80-90% of brain development occurs before age five, with approximately one million neural synaptic connections formed in the first few years of life that establish the foundations of language, executive function, and social trust. The skills acquired in early childhood — curiosity, empathy, self-regulation, and resilience — are precisely those that will become more valuable in learning societies characterized by continual change.

These priorities gain urgency in light of ongoing demographic change. Fertility rates are declining, which means that fewer young children will enter schools in the coming decades, while the share of older adults in the population continues to grow. Going forward, schools may need to serve as intergenerational hubs of learning and civic connection in communities where the majority of people will be older.

As Americans live longer, older adults will increasingly return to schools, whether formally or informally, as mentors, caregivers, and learners themselves. Schools may become ideal, even essential sites for bridging generations: preparing children for lifelong learning, supporting adults as they retrain and reskill, and offering civic spaces where younger and older people learn from one another. Technological and demographic change together motivate a renewed national commitment that recognizes schools as evolving relational anchors, respects educators as guides in the face of uncertainty, invests strategically in the formative early years, and reimagines schools as intergenerational institutions that sustain human and community flourishing across longer lives.

2. Credentials are means, not ends

In the schooled society Americans built in the twentieth century, investment in people was organized around the goal of getting as many people as possible to attain specific credentials: high school diplomas and college degrees. This goal had the assets of clarity and measurability, with progress gauged by how many people sought and ultimately attained these credentials. Their value could be ascertained by observing statistical associations between credential attainment and specific outcomes such as occupational mobility, lifetime earnings, and physical health.

Yet this clarity came at a high cost. Through a process social scientists call *goal displacement*, the credentials — not the positive outcomes with which they are statistically associated — became ends in themselves.

A wholesale commitment to credentialing has encouraged educators, philanthropists, and politicians to make progress on a few numbers (e.g., graduation rates, time to degree), rather than people's actual learning, their capacity for employment, and their ability to make informed decisions about their own lives.

Even if unintended, there are many unfortunate consequences: attention to aggregate data points derived at a distance rather than to human learning on the ground; ambiguity about what underlying skills and capacities diplomas and degrees represent; and a tendency to see those who do not accumulate a few specific school credentials as failures.

School credentials are likely to remain components of our national human-capital enterprise, but it is important to recognize that credentials are means, not ends.

What ends do we want school credentials or any investments in learning to accomplish? Only once this question is answered squarely can we design systems for pursuing talent goals unconstrained by outdated presumptions.

Only then can we devise valid, reliable, and collectively agreed-upon ways to measure progress toward goals that truly matter.

It is hardly within the purview of this document to name what those goals should be. Figuring that out is appropriately an ongoing and truly national conversation.

To start the dialogue, we offer a few suggestions. Admirable and worthy goals might be agency, mobility, and resilience.

By *agency*, we mean the ability for people to imagine possible futures for their own lives, understand how to pursue those futures, and have the tools to get themselves there. Related terms for the same idea include *self-efficacy* and *empowerment* — it is related also to what developmental psychologists call *purpose*. Especially in rapidly changing times, people fear a loss of control over their own futures as changes in work and technology threaten to outstrip our ability to adapt. Yet human learning has long been a mechanism for empowering humankind's ability to shape history. It must remain so.

The present moment demands a recommitment to giving people the tools to act on their own behalf, from the earliest years of life and throughout adulthood. A learning society would recognize that agency is only partly inherent at birth.

People must be given both a sense of agency — a belief that their futures are their own to make or discover — and also have access to the information, learning, and employment opportunities necessary to pursue those futures.

By *mobility*, we mean the ability of people to change the work they do: whether by moving up an occupational or earnings ladder, or moving from one domain of work to another.

An explicit promise of the schooled society has been that school credentials foster upward mobility of earnings and occupational status. This remains a noble idea and a quintessential component of what is often called the American Dream: that people can affirmatively change their own lives and those of their children through education. We believe that the learning society should preserve this dream, but amend it — there should be many ways beyond schooling to honorably learn, move, and grow.

By *resilience*, we mean the ability to anticipate, cope with, and profitably adapt to change. The technological developments of our time, the extraordinary complexity of our economy and society, and the fact of lengthening lives means that our ability to accept, embrace, and benefit from change are likely to be essential components of satisfying lives. Doing so will bring strong payoffs for all of us. It will enable job fluidity across the life course, making for a more flexible base of human capital essential for shared prosperity and economic competitiveness.

Research further affirms that resilience is deeply rooted in secure early attachments but can also be taught and strengthened later in life. Resilience is not a fixed trait but a set of skills and mindsets that can be intentionally nurtured through caring relationships, supportive environments, and structured learning opportunities. This underscores the need for schools — as well as families and communities — to integrate relational and resilience-building practices from the very beginning of a child's educational journey.

3. Design for change across longer lives

Anyone who has watched children grow understands that investments in human beings are cumulative, with later investments building on earlier ones.

There is a wealth of evidence to support this wisdom: educational opportunities and social environments in the first two decades of life have consequences for earnings, lifespan, physical health, and psychological well-being across the entire life course. This has led to a great deal of formal theorizing about when and how to make investments in people.

Most of the nation's public investment in human capital has been concentrated in K-12 schooling, with far less directed to the earliest years of life or to sustained opportunities for adults. This imbalance has left the critical early years chronically underfunded, despite clear evidence of their importance, and has also narrowed attention away from the need for ongoing learning across the life course.

When analysis begins from a presumption of scarcity — that there is only so much that can be invested in any one person's human capital — it can seem sensible to concentrate resources in the school years so they can accrue, like interest in a savings account, over a longer time horizon. But the scarcity presumption may itself be a legacy of schooled-society thinking: the belief that investments in human capital must take the form of brick-and-mortar schools and the conferral of costly school credentials. Once we recognize that investments in human capacity need not be limited to inherited school models, the whole calculus of what counts as investment in people can change.

Additionally, the early-investment logic may presume relative stability in the demand for particular kinds of human capital over time. Early investments in human skill and capacity will only pay off if those skills and capacities are actually acquired and valued in labor markets years later. Yet at the current moment there is uncertainty about just what the market for human talent will look like even in the near future. Given the scale of changes at work already underway in the fourth industrial revolution, it is little surprise that forecasters are advocating for serious additional investments in adults throughout their ever-longer working lives. There is also ample evidence that the potential for learning among adults in the second half of life remains open and can be thoughtfully supported in ways that are sensitive to changes associated with normal aging.

In light of this, architects of a learning society might opt for a more balanced investment strategy than what twentieth-century designers pursued. The new strategy would honor the pivotal importance of enabling learning in the first two decades of life, but not stop there. It would recognize that lengthening lives and rapid technological change are likely to reward an investment strategy that enables people to continually learn and flexibly adapt their skills and capacities to enable different kinds of work over time.

4. Build infrastructure for caring

The schooled society created boundaries of space and time between school, work, and home. This design has had costly and far-reaching consequences. Some were positive, at least for a time: compulsory school attendance for children made it possible for parents to leave home for paid work. It also enabled communities, regions, and nation-states to foster a sense of solidarity and citizenship among their people.

Yet the segregation of the official site of learning from work and home has had many negative implications. It has forced adults, especially women, to figure out how to simultaneously care for children and other loved ones, earn valuable school credentials, and work for pay. It has forced people to work double and triple shifts: one on the job, another caring for others, and yet a third in caring for oneself. The cost of this is often paid in overwork, exhaustion, and diminished physical and mental health.

The technological and demographic transformations of our time provide opportunities for Americans to dramatically rethink the organization of home, work, and learning in ways that avoid these hard choices. For example, if working is learning, and if workers get credit for both at once, then the current tension between them is eased. If learning that happens at home or at play is formally recognized by schools and employers, another tension is eased. And if careers are envisioned as sequences in which primary commitments to paid work and care alternate across the arc of adulthood, people will experience fewer contradictions between life's many demands.

A great failure of the schooled society we built in the twentieth century is that it obliged people to either make hard choices or overwork their own bodies, minds, and hearts to care, work, and go to school all at once. A great opportunity for the learning society is to dramatically reconfigure our institutional infrastructure so that care work, paid employment, and learning are truly simultaneous and complementary.

5. Working is learning

The schooled society created a stark distinction between sites of learning and sites of paid work. The learning society dispenses with this distinction. It follows the wisdom of many scientific and craft traditions in recognizing that the best learning happens by doing, typically on teams and alongside others more experienced. Such learning goes under many monikers: apprenticeship, work-based learning, contribution-based learning, for example. It is an ancient mode of human interaction, far preceding formal schooling, and remains pervasive worldwide to this day.

Many employers, entrepreneurs, and educators are already developing contemporary forms and business models that commingle (often paid) work and learning.

A learning society should encourage these modes of learning; develop an applied science to better identify, instrument, and measure returns to these modes (see Principle 6, below); and develop policies to encourage and reward these modes in workplaces, schools, and civil-society organizations.

The move to recognize working as learning is already well underway across the country and a clear sign that the learning society is a living work in progress. We encourage employers, especially, to embrace their pivotal role as sites and agents of learning and to find new ways to document and celebrate the learning assets they confer to their employees. Embracing the learning society approach also has implications for practices related to recruiting and assessing employees. It will be crucial to develop new mechanisms for signaling attained skills and capabilities across the career span.

Corporate leaders, people managers, and employees alike will have to "unlearn" the limits of schooled-society thinking and instead understand and be trained to implement long-life learning practices in the workplace.

This "longevity-learning literacy" is the foundation for effective implementation in an employer organization. Many employers compete with each other to provide the most enriching, rewarding, and humane learning environments. In doing so they will enhance their own prosperity while also adding to the strength and resilience of the entire society.

The move to rethink working as learning may be more difficult for schools, especially colleges and universities, whose core business models are premised on the idea that the learning they offer is different and somehow superior to learning that occurs elsewhere.

Yet "applied" and "experiential" learning are now touted hallmarks of updated curricula at many four-year institutions, and the blurring of the boundaries between learning spaces and workplaces has virtually always proven fruitful for experts in both domains — whether in the learned professions, the applied arts, or vocational fields. University programs in business, engineering, health, and education have long understood this, routinely bringing field experts into classrooms and placing novice practitioners into workplaces. Architects of the learning society might purposefully design these relationships in every domain of human endeavor.

6. Build an economics of learning

The schooled society accreted its own social science, organized around the presumption that formal education is the primary way in which individuals and societies invest in human capital. In this way it is deeply constrained by the grammar of schooling. Specifically, social scientists' proxies for human capital investments have long been years of school, school quality, and the attainment and relative prestige of school credentials. Only very rarely do social scientists directly observe the learning implied by school exposure and degrees. Only very rarely do researchers of any stripe explicitly identify, measure, or model learning that happens outside of schools. Nor do they yet, in any systematic way, measure or model the economic returns of out-of-school learning for individuals, firms, or society more generally.

These oversights are a huge disservice to the American people. They undermine our ability to fully recognize and honor a great deal of human talent. They mean that we consistently fail to credit workplaces, households, and religious and civic organizations for the growth in human capital they nurture in people every day. Another sobering implication is that we may over-index schools as vehicles of talent development.

Like looking for lost keys under a lamppost, observing human-capital investments and returns through the lens of school exposure and degrees probably hides as much as it reveals.

These absences also create very large intellectual, scientific, and business opportunities. They challenge us to think much more carefully about what counts as evidence of learning and how best to measure and document the utility and portability of learning across different real-world contexts, including learning that happens in digitally-mediated spaces inside and outside physical workplaces. Consider that in the twentieth century, observation and documentation of learning happened independently of the learning treatment: researchers relied on assessments or exams administered before and after a treatment to gauge its effects. In our current digitally-mediated world, observation and documentation of learning can happen simultaneously with the treatment itself.

Even as the words you are reading were being typed into a computer, a sophisticated algorithm continually observed the cadence of the sentences and suggested possible next phrases. Both the writer and the machine were working and learning at once. This simple fact radically expands possibilities to provide, improve, measure, and reward learning opportunities in every domain of human activity. As the business-school dictum puts it, you cannot manage what you don't measure.

Building a learning society will require developing a social science that (a) recognizes learning happens in every social sector; (b) instruments learning in these sectors for measurement; and (c) models costs and returns to learning for individuals, organizations, and society.

As returns to learning investments become measurable and comparable, they will incentivize further investments into learning across the career span. The authors of this document are encouraged by the wide array of experiments presently underway to observe and document learning: skills wallets, learning and employment records, credit-for-prior-learning programs, and contribution-based hiring, among many innovations.

7. Think carefully about skills

For all of the current national dialogue about prioritizing "skills" over legacy school credentials, we are struck by our thin working conception of skills.

What are skills, exactly? Are they few or many in number? Who gets to decide what counts as a skill, and are all skills of equal value? Is a skill something that inheres in a person, a group, a particular context, or all of these?

Architects of the learning society need to be thoughtful about what they mean by this term.

Being precise about the human assets we are trying to nurture should enable us to design learning opportunities more strategically. Doing so likely requires a larger conceptual vocabulary than we currently have in policy discourse. By way of provocation, we suggest an initial parsing of capacities, skills, and craft.

Capacities are generalized abilities that enable learning and adaptation in the face of uncertainty. Capacities include high-level literacy and numeracy; critical thinking; inquisitiveness; persistence, or "grit"; patience; empathy for other points of view; and the ability to negotiate and work collaboratively. Once obtained, and if sustained, capacities serve their holders across lifetimes.

Skills are narrower, often time- and context-specific abilities. Mastering a computer coding language or software platform or a specific role in a manufacturing process, or navigating a complex bureaucratic sequence are all examples of skills. While essential for human livelihood and economic productivity, the half-lives of specific skills are often short.

Craft is the commingling of capacity and skill in particular domains of endeavor. It implies a "feel for the work" that tends to come with steady practice, connoting the special value of emotional and aesthetic aspects of value beyond the instrumental. Craft is often the aspect of the work that gives a particular worker or team its signature. It is often a point of pride.

Distinguishing different kinds of human assets will grow increasingly important as enterprises of every description continually combine the abilities of humans and machines. Just as they must eschew emphasis on school credentials, architects of the learning society must avoid leveling all human activity to skills alone.

8. Design for transitions

A hallmark of human lives today is that they are full of transitions, and transitions are often financially and psychologically costly. Consider residential moves, job changes, family formation, divorce, or recovery from addiction: even when they are ultimately rewarding, they are typically hard to navigate. In most cases the burden of managing transitions and the risks associated with them fall to the individuals experiencing them. Derisking and supporting transitions will foster the adaptation, resilience, and performance of the people whose talent is being nurtured. Smoother transitions for individuals will likely make for easier flexibility and change in a wide variety of organizations.

Akin to how prior technological revolutions brought more changes to human lives, current technological and demographic change will equate to more frequent, occasionally dramatic transitions between kinds of work and career phases. According to LinkedIn's 2025 Work Change Report: AI Is Coming to Work, professionals entering the workforce today are on pace to hold twice as many jobs over their careers compared to 15 years ago, and the rate at which LinkedIn members add new skills to their profiles has increased by 140% since 2022. Learning opportunities are common and powerful mechanisms for smoothing transitions. This is why people so often turn to formal schooling at a key moment in the life course: attending or returning to college has long been a key way to navigate the transition to adulthood, or to change careers.

Architects of the learning society might commit to a design principle that transitions are essential to economic vitality and human flourishing. Transitions pose challenges to people who are undergoing them, but they are also a window of opportunity to learn, grow and change. A commitment to the positive value of transitions would encourage the development of employer practices that recognize, celebrate, scaffold, and reward them; business ventures that provide people with tools for navigating transitions; and public policies that support citizens in moving between jobs, domains of employment, geographic regions, and life stages. The result will be a more dynamic and generative workforce and citizenry.

9. Make the learning society a joint venture

Americans met the human capital challenges of prior industrial revolutions by working collaboratively across sectors — first for universal mass schooling for children, and again to dramatically expand higher education. Neither of these were government-centric solutions. They were instead outcomes of diverse coalitions of businesspeople, religious and civic leaders, academic researchers, and philanthropists. Local, state, and federal governments played crucial roles as funders and coordinators — but the schooled society was plural from the very beginning. Building the learning society must be a joint venture as well.

Investors, entrepreneurs, philanthropies, employers, and legacy schools all will play roles. So too will workplaces and civil-society organizations where so much learning already takes place.

Given the variety of contributors to the learning society, the nation cannot presume that the funding and governance structures we built for the schools of the past are right for the needs and opportunities of the current era. Indeed those structures already have betrayed their limits, in the form of complex and obdurate school bureaucracies and procurement criteria; inflexible postsecondary accreditation bodies; public funding tied directly and often exclusively to programs bearing college credit; public postsecondary and workforce agencies that work almost completely independently of each other; and reciprocal suspicion between legacy academic institutions and new providers.

The good news is that much of the capacity and goodwill the nation needs to build the learning society are already here. That there are established public schools and colleges serving every community in America; that those schools and colleges have funding streams hard-wired into public budgets; and that so many of them are cherished and even beloved community anchors: all of these facts make legacy schools essential foundations of the learning society. Still, the planning table for the learning society must be set to include a wide array of parties beyond schools, colleges, workforce agencies, and policy officials.

There is simply too much capacity and intelligence in tech, venture capital, and in the human-resources and learning offices of businesses.

We see at least three broad areas for new forms of cooperation among leaders in all of these domains: data systems, finance, and governance.

Data systems. There is now wide consensus that the national human capital enterprise must be supported by data systems that more comprehensively describe the arc of learning and employment of individuals and entire populations throughout the life course and across generations.

Public data sources are chronically fragmented in the United States between multiple state and federal agencies that serve different dimensions of human need: education, employment, health, and citizenship, for example, with agencies in different domains jealously guarding their turf and budgets. Even in this fragmented context, reliable and transparent public data, especially from federal statistical agencies, is crucial, providing the common ground needed to integrate and benchmark information gathered across sectors.

Nevertheless, significant gaps remain, as employers continue to maintain and guard their own vast stores of data. The third and fourth industrial revolutions have created non-public digital platforms that produce, aggregate, and analyze still more information describing the life course of learning and work.

There are a very large number of public, private, and philanthropic efforts underway to take advantage of this data richness by creating purpose-specific linkages, but there is very little coordination or shared visioning among them.

Architects and engineers of the schooled society are already seeking federated mechanisms and standards for data integration and interoperability that do not rely on government requirements: a huge task that to our knowledge has yet to develop a scientific or operational core.

Finance. By the first decade of the twentieth century, Americans reached a national consensus that all our citizens were entitled by right to a basic education. Today the right extends to the successful completion of high school. Postsecondary education never achieved that status.

Nor did Americans ever figure out how to pay for the postsecondary education they consumed without incurring vast consumer debt.

This latter problem was never solved even at the height of the third industrial revolution, when the need for college-educated talent was arguably at its greatest. We now face the historic challenge of enabling people to learn more, and over longer stretches of the life course, than ever before. Who will pay for all of that learning?

We believe that this challenge requires a new social contract for talent, in which the cost and responsibility of growing human capacity are shared between citizen-workers, government, businesses and employers, and philanthropy.

Unless the nation collectively decides that a high school diploma is all the learning that Americans must have to sustain prosperity and global competitiveness, we simply must develop new mechanisms to pay for talent development without debt.

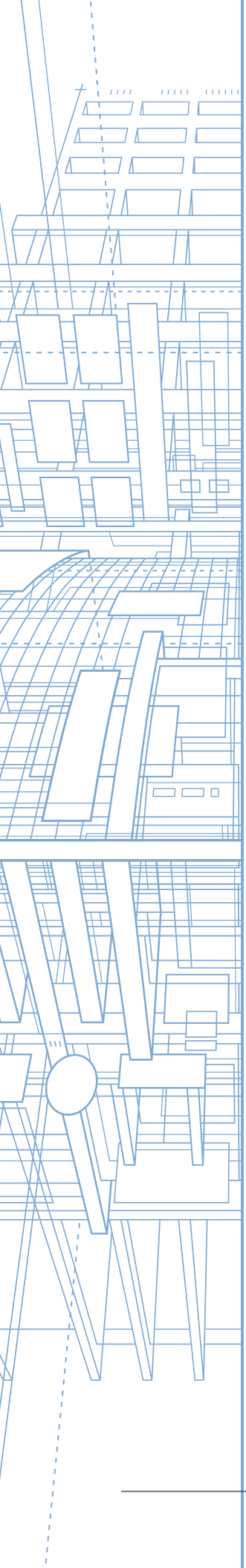
Governance. Achieving truly shared responsibility for investing in human capital — and building the data systems that will enable us to plan, observe, and improve on returns to those investments — will entail some sort of governance. By governance we do not mean "regulation," with its presumption of a single dominant authority, usually a government, setting rules or "guardrails" for all other parties.

We advocate instead for developing mechanisms of resource-pooling, norm- and standard-setting, and reciprocally coordinated decisionmaking among a wide plurality of public and private entities.

This is hardly a fanciful or utopian idea. It is a routine way of getting complex tasks done in scientific and technical domains. Air and maritime navigation, global research on AIDS and other pandemics, and scientific communities of all sorts rely on reciprocal coordination, discipline, and accountability systems that are both additional to, and very different from, government regulation. Functional markets are governed by analogous forms of coordination and discipline. Architects and engineers of the learning society might emulate governance strategies like these.

In doing so they will bring to fruition a nascent learning sector — a field of activity that includes legacy colleges and universities, workforce agencies, corporate HR and learning functions, state and federal agencies that fund education and workforce programs, venture capital, edtech, and allied philanthropies.

That likely sprawling enterprise will almost surely be as heterogeneous and lively as the nation it serves. But it will also have conscience, vision, sustainable business models, and shared purpose.



Conclusion

The ability to make our own futures, to move up in the world, to pass on more than what we ourselves have inherited: these are the promises embodied in the American Dream that now seem illusory to millions. Many of the institutions created to enable that dream — public schools and colleges, retirement pensions, and social services, for example — have been weakened by an erosion in the basic social contract that ties government, business, civil society, and everyday citizens together.

We now live in a world in which responsibility for lifelong employment and economic prosperity falls on individuals, yet far too many of us do not have adequate resources to invest in our own futures. As a result, the current moment of spectacular technological opportunity feels less like progress and more like another change that threatens to put the American Dream further out of reach.

Yet prior generations also teach us that American inventiveness can produce shared prosperity when political, business, and civic leaders find fresh ways to invest in people. In the previous century, we enabled educational opportunities for every citizen that created remarkable economic growth as well as national pride.

It is time to do something audacious once again. We need to build a learning society that distributes learning opportunities more frequently, in more places, to more people; that recognizes, measures, and rewards learning and its providers wherever they may be; and that distributes responsibility for this investment to all of those who benefit.

Successful achievement of the learning society will enable paths to prosperity that bring the American Dream into reach for all of us. Rapid technological change has made existing methods of educating and credentialing workers inadequate. Our inherited systems of developing and recognizing human potential on the basis of school credentials and resumes are increasingly outmoded.

New technologies can be used to deliver learning opportunities at greater speed, at lower cost, and with personalized precision. They can also be used to document and convey learning accomplishments in a wide array of contexts and platforms. Citizens of the learning society embrace these changes and celebrate entrepreneurs who develop novel ways to push them forward. The United States has all the human talent, financial resources, and organizational capacity it needs to bring a learning society to fruition.

Employers, educators, and learning businesses are pioneering new ways to deliver, document, and reward learning. The two things we lack are a shared vision for what the future should look like and a web of relationships between schools, higher education, and business that will enable the collaborations necessary for cumulative change at scale. Seeding these relationships and nurturing shared language, metrics of progress, and reciprocal trust are essential next steps.

As we grow ever more learning pathways across longer lives, we will restore dignity and purpose to people and communities that have seen both erode in recent years. All of us deserve the opportunity to consider and choose our own futures, to change our own lives, to prosper economically, and to flourish as whole persons.

It will take more than a village to build the society that fulfills that promise. We invite you to join us in getting to work.

Contributors

The Stanford Center on Longevity appointed a cohort of Futures Fellows during the 2024-2025 academic year to develop a fresh vision for investing in people at a moment of rapid technological and demographic change. The group represented a wide range of doers and thinkers from private industry, academia, philanthropy, venture capital, organized labor, government, and civil society. We convened for three in-person residencies and met virtually over the course of 12 months to develop the ideas presented here. Comments and criticisms from a working assembly at the U.S. Chamber of Commerce Foundation in Washington, D.C., on May 1, 2025, substantially informed this final output.

Building a Learning Society is not a consensus document. The Fellows do not necessarily all agree on every point presented herein. Yet we all claim the document as a collaborative accomplishment, and together offer it to the nation as a provocation for big-picture thinking.

We invite you to stay involved with the learning society: www.learningsociety.io

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