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Educational Adequacy in the Twenty-First Century

MAY 2, 2018 — ANTHONY P. CARNEVALE, ARTEM GULISH, AND JEFF STROHL

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Democratic societies are rooted in the widely shared belief that all lives have value. As a result, the idea of educational adequacy in a democracy is rooted in the conviction that education's primary mission is to provide knowledge and skills sufficient to allow people to live fully, according to the standards of their time. In a democracy with a market economy—and little support for an extensive social safety net—paid work is essential to individual human flourishing. In the U.S. socioeconomic system in particular, individuals are expected to attain a base of self-sufficiency. In this system, individual well-being is primarily a personal responsibility. Education is the preferred method in the United States of providing access to opportunity to attain self-sufficiency.

The goals of education in modern democratic capitalism must strike a pragmatic balance between the intrinsic value of human flourishing and the extrinsic economic value of careers that provide access to broad, middle-class earnings. And while equitable funding for community colleges to achieve adequate outcomes is an important policy objective, it is imperative to clearly and concretely establish the outcomes that postsecondary education is expected to achieve to be considered adequate. Equalized funding does not, in itself, ensure that higher education fulfills its intended role in American democracy. By the same token, we cannot begin determining an appropriate level of funding until we have a clearly defined goal of success.

Educational adequacy has evolved over the decades of American history to become an established responsibility of state governments, following a series of court cases in the United States during the 1970s and 1980s.[1] In the transition from an industrial economy to a post-industrial service economy, the role of education as a bridge to adulthood has grown from universal elementary to secondary schooling and beyond. This happened because technological advancements increased the demand for educated workers, while the nation moved from agriculture through industrialization and into the modern digital economy. The increase in workplace skill requirements over time has transformed the meaning of educational adequacy.

Educational adequacy is a broad concept that includes economic, academic, social, civic, and humanistic aspects, among others. A narrower standard of economic self-sufficiency is a necessary, but not sufficient outcome for

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higher education to achieve its goals. Individuals cannot live fully in their time if they are living under a bridge. The modern economy now demands a workforce with education and training beyond high school. The day when high school was enough is slipping; today, only three out of ten jobs for high school workers are fulfilling the promise of economic self-sufficiency, and almost solely for men.[2] Clearly, high school is not adequate in a modern economy where over 60 percent of all jobs require at least some postsecondary education beyond high school,[3] as do 80 percent of good jobs that support middle-class lifestyles.[4]

This leads us to argue that a two-year degree is on its way to becoming the minimum education needed to be self-sufficient, and thereby the minimum adequate education must be framed as high school plus two years of college. To help policymakers, colleges, and the public make the right choices, the post-high school education must be accompanied by a new standard for measuring educational adequacy.

We propose a new concrete standard for educational adequacy focused on the demonstrated capacity of postsecondary programs to provide economic self-sufficiency to graduates, based on the earnings of students who complete educational programs. We acknowledge that reality is complex, and so it will be necessary to adjust this standard in applying it to the real world. Nevertheless, we view it as an important starting point.

In order to be educationally adequate, a postsecondary program must provide its graduates with economic self-sufficiency. We propose that, to be recognized as leading to such self-sufficiency, a program must leave its graduates earning more than $35,000 per year ten years after they have completed it. Over that ten-year period, that program also must provide its graduates with a sufficient earnings premium, compared to the earnings of workers with only a high-school diploma, to cover the program's total cost to the student. The program's total cost includes its direct cost, as measured by net price, and its opportunity cost, as measured by the student's forgone earnings during the period that the student was enrolled in the program.

The earnings figure of $35,000 ten years after graduation is not a goal that programs should strive upward to reach, but rather a floor through which they must not fall. It is expected that many graduates will exceed that figure by far, as plenty now do: 67 percent of workers with associate degrees and 85 percent with bachelor's degrees now exceed those earnings after ten years.[5] But, it is also expected that with adequate funding a significant portion of a program's graduates—a precise level to be determined—must not fall below that earnings level, lest the program be deemed not adequate. Furthermore, this figure is based on averages—average cost of living, earnings premiums, and so on—and when applied should be adjusted to take into account regional variations in the labor market; it will need to be adjusted upward in high-cost, high-wage states, and downward in states with low cost of living.

Importantly, the annual earnings figure of $35,000 is also the threshold into the middle class. Americans who devote two years of their lives to postsecondary education, and then spend a decade in the labor market, should at least be able to attain this standard of self-sufficiency; if they cannot, then this raises serious questions about education's role and value in a democratic capitalist society.

As a practical matter, this outcomes-based approach to defining educational adequacy helps create an incentive structure in postsecondary education. For colleges, it offers potential rewards for finding efficiencies in achieving desired outcomes, while leaving them the autonomy to make their own decisions about how to bring about those efficiencies. Several factors—including high levels of variability in educational practice by program and institution, as well as variation in individual student needs—complicate efforts to come up with a single common adequacy cost across programs. But, in order to begin the process of identifying a variety of cost structures associated with different programs, we must begin by identifying a common endpoint of what constitutes success.

Focusing on student earnings-related outcomes tied to economic self-sufficiency creates an incentive mechanism, much like the efficiency drivers seen as the foundation of

a perfectly competitive market. In the economic market model, efficiency gains occur because firms are constrained by a market-clearing cost and the desire for profit. In this model, firms take cost to the lowest point achievable, given present technology; internal process is irrelevant, as long as the cost structure is sustainable, given the market-clearing price. Although we acknowledge that higher education is not the same as an unregulated market, we suggest that, for postsecondary education, economic self-sufficiency should serve a similar function as the market-clearing price, setting expectation for programs of study to achieve this goal with a sustainable cost structure and rewarding efficiencies attained in the process.

Of course, setting rigorous goals without providing necessary resources is a recipe for failure, as we have seen at the K–12 level.[6] That is why, in addition to outlining the desired outcomes in this report, The Century Foundation's Working Group on Community College Financial Resources will separately be making recommendations on how best to estimate the level of investment required to meet these goals.

This report begins with a brief history of the co-evolution of educational adequacy and democratic capitalism. This will help the reader understand how education has gained prominent role in the U.S. society and how the notions of what is adequate education changed as the economy and social institutions have evolved. The report then discusses the difficulty of defining education adequacy in a rapidly changing economy and educational system. It then presents a simplified approach to calculating a standard for measuring educational adequacy based on the earnings of graduates, to give the reader a concrete grasp of how these principles can be applied. At the same time, the authors acknowledge the need to deal with numerous complexities if our concept of economic self-sufficiency is to be applied to real world conditions, and understand that policymakers and practitioners will need to make additional adjustments for this model to fit their particular circumstances. This report ends with a discussion about some of the issues that will need to be grappled with, and suggests that the answers to many questions will need to be based on very subjective decisions, or on social consensus.

The Co-Evolution of Educational Adequacy and Democratic Capitalism

Educational adequacy is an amorphous target. It expands in size and changes shape with the growth in social and economic complexity that occurs in democratic capitalism. The idea of educational adequacy is deeply rooted in the original historic tension between democracy and capitalism. The idea that there needs to be some measure of adequacy in the provision of education and social welfare has helped prevent a breakdown in the social contract between democracy and capitalism in the years since the industrial revolution dawned.

During the eighteenth and nineteenth centuries, democratic ideas grew alongside economic markets. Capitalism and democracy were allies in their revolt against the economic and political bondage imposed by feudalism. At the same time, however, they remained in some ways natural antagonists, the tensions between them driven, in part, by irreconcilable ideas. Democratic citizenship presumes equality. Market economies, however, are driven by the economic inequality necessary to motivate work effort, talent, and entrepreneurship, and they inherently produce lopsided accumulations of wealth and investment capital in private hands.

The Nonmonetary Value of General Elementary Education as the Baseline Adequacy Standard

Alfred Marshall was one of the most influential economists of the late-nineteenth century. Speaking at the Cambridge Reform Club in 1873, he offered one of the first arguments attempting to square equality among individuals with the inequality and amoral risk inherent in markets. He argued that capitalism and democracy were antagonists in theory,

but also could be allies in practice. He argued further that the contradictions between democracies and markets could be reduced if markets would become the paymaster of a constant expansion in publicly funded education and social services.

"The question," Marshall said, "is not whether all men will ultimately be equal—that they certainly will not—but whether progress may not go on steadily, if slowly, till, by occupation at least, every man is a gentleman . . . [who values] education and leisure more than the 'mere increase of wages and material comforts.'"[7] Marshall's notion of educational adequacy in the early years of democratic capitalism referred to the nonmonetary value of what we now think of as elementary education—the kind of elementary education that encouraged the populace to "steadily accept the private and public duties of citizenship."[8] He assumed that a basic general education would also be a universal common experience for the citizenry, rather than a sorting device for allocating economic opportunity.

In Marshall's day, education had relatively little significance in the economic sorting of the broad mass of society. The vast majority of people learned the specific skills for their occupations in their homes or on the job, not in grade schools, colleges, or universities. Marshall did not foresee that a long revolution in the valuing of human capital would make education—and the access it provides to highly paid occupations—a key basis for determining who accumulates wealth and power. He had no idea that, by the twenty-first century, a massive system of colleges and universities—with varying degrees of selectivity in admissions—would serve to stratify American society by race and class.

The notion of educational adequacy has expanded over time, its growth driven by increasing social and economic complexity.[9] In different national contexts, it has expanded at different rates and taken on different shapes. The history of educational adequacy in the United States parallels the evolution of democratic capitalism in Europe, but with notable differences, particularly concerning the nation's diversity. The European nations have historically been much more demographically homogeneous, which made it easier for their central governments to expand both their welfare states and their education systems.[10]

In the United States, a historical commitment to a general elementary curriculum for youth arose from efforts at the local level, and the education system as a whole generally evolved alongside economic and societal change. To meet the demands of workplaces and broader society, public education on the American continent went from being almost nonexistent in the seventeenth and eighteenth centuries to providing universal access to schools at the elementary level and then the secondary level by the mid-twentieth century. In the twenty-first century, it must now expand to encompass at least two years of postsecondary education.

In the colonial days of the early 1600s, public education primarily consisted of grammar schools for boys. Then, as the needs of the country changed around the middle of nineteenth century, age-based grades were introduced, along with standardization of public school curricula. By 1918, compulsory public schooling had been introduced in each of the forty-eight states.[11]

The movement toward universal high school began in New England, but came to full flower among the nation's most homogenous white, protestant populations, in places such as Iowa and Nebraska.[12] Demographic diversity was often a barrier to the expansion of educational adequacy nationwide, then and now.[13] Voters were never happy to support expansion in the welfare state or education for people who looked different or went to different churches. In addition, the U.S. Constitution, written long before education played a significant social and economic role, lacks any reference to a federal right to education,[14] such as those incorporated in constitutions subsequently drafted by other nations. At the same time, our diversity—and our successive waves of immigration—also acted as a spur, leading to calls for a common elementary curriculum that would have the assimilation of a diverse population as one of its chief goals. The "common school" in the early United States offered a general academic education devoted to cultural and moral precepts, as well as the three Rs (reading, writing, and

arithmetic). Its teachings were deemed adequate in that they were "education for life," not as specific education for work. Training for specific jobs took place in the spaces of everyday life, such as the home or the workplace. In the eighteenth and early nineteenth centuries, new waves of immigration, combined with an abundance of land and chronic labor shortages in towns as well as in the countryside, created powerful incentives for adults to engage in informal learning. For most non-Hispanic white men, our early history provided opportunities for individual striving as boundless as the western frontier. The exploitation of the West made America a boomtown for the fraternity of white men, who joined enthusiastically in the commerce and politics of the time.

The extraordinary vigor of American politics—with voter participation rates generally above 90 percent among the franchised population of white men—helped give rise to the equally extraordinary proliferation of newspapers and spread of literacy in the first half of the nineteenth century. This was America's first information revolution—the new democracy and unfettered capitalism in print. Between 1790 and 1835, while the population grew from 3.9 million to 15 million, the number of newspapers increased eleven-fold, from 106 to 1,258. By 1840, total weekly newspaper circulation in the United States, with a population of 17 million, exceeded that of all Europe, which had 233 million people.[15]

According to historian Robert Wiebe:

> *To utilize this network, Americans made themselves literate. With little help from public schools, democratic communication sent literacy rates soaring between 1800 and 1840: from around 75 percent of adult whites to around 95 percent in the north and from around 50 percent to around 80 percent in the south.*[16]

The Economic Value of Career-Related Education Becomes a Key Consideration in Defining Adequacy

The notion of adequacy became more complicated as the nation moved toward urbanization and industrialization in the latter half of the nineteenth century. The changes flowed both from the bottom up and from the top down. From the bottom, the elementary school curriculum became more practical, with a shift from character building and godliness toward a stronger emphasis on the more utilitarian three Rs. At the top, the recognition of elite knowledge as economic capital gave us the Morrill Act of 1862, which promoted the modernization of agriculture and industry through science and engineering.[17]

At the elementary level, the new pragmatism balanced basic skills for practical application with character development. At the university level, a new balance arose between knowledge as economic capital and the more abstract liberal-arts curriculum. The Morrill Act sought to promote practical disciplines "without excluding . . . classical studies."[18] The pragmatic turn in the notion of educational adequacy also caused it to assume a new dualism: balancing the interests of the economy and the state with individuals' interest in human flourishing. Over the next century and a half, education became a major determinant of an individual's wages and material comfort. Education institutions promoted human flourishing in a nonmonetary sense, but they also recognized that flourishing in a capitalist economy requires a sufficient education to obtain gainful employment at living wages. This dualistic concept of educational adequacy under democratic capitalism continues to influence our thinking today. In our effort to determine standards for educational adequacy, both theory and practice continue to be haunted by the tension between education intended for life in a democracy, and education intended for work in a capitalist economy. This tension shows up in a number of major debates in education, including arguments that pit the economic value of education against its nonmonetary value; general education against specific education; academic learning against applied learning; and vocationalism against professionalism. These dualities don't align neatly. Both general and specific education, for example, have economic and nonmonetary value. The same is true for the intuitive distinction between applied and academic learning. Each, as John Dewey explains, is complement and substitute along the continuum of human experience.[19]

These tensions can spark acrimonious debates over educational adequacy, because historically what has been at stake are varying degrees of opportunity in a demographically diverse society and class-based market economy. Over the long term, social and economic change has produced demand for education to be increasingly equally distributed, for both its economic and nonmonetary value. The expansion of access to education, however, has always been fraught with questions of social and economic justice, with equity issues tending to arise as the process of change leads to new forms of academic tracking. Periods of expansion of education access in the name of educational adequacy are followed by periods of increased stratification through tracking and variation in quality. As a rule, educational adequacy moves forward while preserving educational tracking for the least advantaged, thereby hindering upward mobility and preserving the intergenerational reproduction of social and economic privilege.

A pivotal moment in the expansion of educational adequacy was the high school movement of the early twentieth century. As the industrial economy started ramping up, vocational education started becoming more widespread. High schools increasingly shifted their focus to providing students with the literacy and numeracy skills needed to take up assembly line jobs in the burgeoning number of factories and plants across the nation.[20] Vocational schools offered additional technical training for more-specialized industrial positions.[21]

In the 1910 school year, only 9 percent of seventeen-year-olds graduated high school. By 1950, that share rose to more than 50 percent.[22] Because of the high school movement, the United States had far exceeded the European systems of democratic capitalism in the provision of general education. Notably, however, the growth of public high schools led to a growing belief that four-year colleges represented the gold standard in educational adequacy. The number of higher-education institutions in the U.S. rose from 977 in 1900 to 1,851 in 1950.[23]

Mostly, the movement toward universal access to high school was a victory for general education, and for much of this time, the purpose of high school was seen as educating students for life and citizenship, rather than as preparation for college. But throughout the history of thinking about educational adequacy, new efforts at stratification followed efforts to provide universal access as surely as night follows day. A milestone in the stratification process came with the federal government's enactment of the Smith-Hughes National Vocational Education Act of 1917, which established vocational education in "agriculture, trades and industry, and homemaking."[24] It isolated vocational education, intended to prepare students for a job following graduation, from the rest of the general education curriculum in most high school settings. In doing so, it isolated working-class and poor youth, and young women consigned to homemaking, from the general curriculum in high school and, as a result, limited access to college and the workforce.

By the end of World War II, the contours of the current adequacy debate were beginning to come into focus. The demand for adult education increased substantially as veterans found themselves having to develop higher skill levels to enter the workforce, a need recognized with the passage of the GI Bill in 1944. Junior, community, and technical colleges stepped up to meet returning veterans' growing education and training needs.[25] After World War II, high school also started becoming a mass institution and increasingly compulsory in all fifty states.[26]

Adequacy for Whom? The Modern Stratification of Educational Adequacy by Class and Demographic Groups

By the end of World War II, a new equilibrium needed to be found in the bargain between capitalism and democracy, and the role of educational adequacy needed to be established as part of that bargain. With fascism defeated, the contest between the victors—the communists on one side and the democratic capitalists on the other—began in earnest, as the Cold War dawned.

In 1949, Thomas Humphrey (T. H.) Marshall (no relation to Alfred), a prominent social scientist whose work focused on the subject of citizenship and related areas of civil, political, and social rights, updated the original bargain between

capitalism and democracy in a lecture commemorating Alfred Marshall's classic formulation. T. H. Marshall essentially doubled down on Alfred Marshall's 1873 argument, asserting that the equality implicit in democratic citizenship implied "a modicum of economic welfare and security" sufficient "to share to the full in the social heritage and to live the life of a civilized being according to the standards prevailing in the society."[27] T. H. Marshall went on to explain that the institutions most closely connected with this notion of equality in capitalist economies "are the educational system and the social services."[28] His lecture was seminal because it became the widely recognized summary argument for the massive expansion in both public education and the welfare state as an alternative to Soviet and Chinese communism after World War II.[29]

T. H. Marshall 's 1949 speech would prove to be prescient. He worried that the education solution to the problem of inequality in market economies had developed flaws since the time of Alfred Marshall's original lecture in 1873. He ruminated over how education's role as a mediating force between citizenship and markets increasingly was compromised by the growing alignment between education and elite occupational preparation. Education made everyone equal as citizens, but those with the most education, especially in lucrative fields of study at the college level, could accumulate wealth and power to a greater degree. T. H. Marshall fretted that industrial society had "been accused of regarding elementary education solely as a means of providing capitalist employers with more valuable workers, and higher education merely as an instrument to increase the power of the nation to compete with its industrial rivals." He continued, "As we all know, education today is closely linked with occupation, and . . . [through] its relations with occupational structure . . . operates as an instrument of social stratification." The impact of a K-20 education becomes especially powerful because it is frontloaded in the life cycle: "The ticket obtained on leaving school or college is for a life journey."[30]

T. H. Marshall foresaw the growing contradiction between education as an equalizer and education as a source of inequality. This contradiction has only become more pronounced over time, with the strengthening of the sequential alignment between access to higher education, choice of field of study, occupational choice, and individual earnings. Over time, education—especially postsecondary education and training—has become a double-edged sword, providing opportunity while also protecting privilege. The postwar postsecondary system was a boon to striving white baby boomers, but it also fostered stratification that reinforced class and racial privilege.

In the postwar era, the notion of educational adequacy fragmented as the United States emerged as a global colossus and the defender of the free world. A single definition of adequacy came to be replaced by an elitist hierarchy of definitions, an increasingly selective higher-education apparatus at its peak. T. H. Marshall was ahead of his time when he worried that educational adequacy was becoming detached from its democratic mission and more "an instrument to increase the power of the nation to compete with its industrial rivals."[31]

During this time, decision-makers agreed that the United States needed college-educated leaders and high school-educated followers, along with a reliable system for producing them. Not surprisingly, Americans tended to agree that society's leaders ought to be self-selected based on merit. James Bryant Conant, then president of Harvard, emerged as the man with the plan for how such selection should occur.[32] Although a Protestant New Englander, he was not from one of the region's better families—he was raised in Dorchester, a working-class Boston neighborhood. He believed talent ought to trump social standing. He wanted to build an education system that mined the nation's best and brightest, wherever they came from, in a way that was both fairer and more efficient than the WASP (White Anglo-Saxon Protestant) old-boy networks that had been in place for two centuries. Determined to find the next Einstein out somewhere behind a plow, he wanted to build a selective education system that elevated those with innate academic talent. His goal was to create a governing class consisting of the best and brightest, one worthy of a world economic power and able to fight the growing threat of communism.[33]

Conant proposed setting aside an educational elite consisting solely of men from wealthy backgrounds and replacing it with an elite drawn from the masses through the identification of academic talent. He called for the education system to develop the new meritocracy. He proposed using the Scholastic Aptitude Test (SAT) to select the best and brightest for admissions to the selective colleges that would prepare them to lead and serve. His vision could be seen as an updated, secular version of the Calvinist urge to build an orderly world run by the elect. In effect, he intended to take the religious notion of the elect and institutionalize it in secular terms, in the form of government by a natural aristocracy.[34]

To construct the new sorting system, Conant proposed reinventing the education pipeline. The nation already had grade schools and high schools in place, even if barely half of students finished high school in the 1940s. He laid out his plan for a new sorting system in his 1959 book, *The American High School Today*, a number-one bestseller. In it, he proposed the creation of comprehensive high schools with two separate tracks: one for the majority of students, who required vocational training, and another for the minority of students with IQs over 115, who would be groomed for selective colleges and leadership positions in the governing meritocracy.[35]

Conant wrote to a prospective staff member, "I wish to identify the schools which are doing a good job in preparing for college the youth with IQs above 115, but at the same time are handling adequately the vocational courses and schools where the academic group is not more than 50 percent."[36] There is little doubt about where he stood on the effects of nature versus nurture. He believed that intelligence was innate, fixed at birth, and one-dimensional. "The percentage of those who had a delayed intellectual awakening," he thought "was too small to bother with."[37]

The new elite may have been narrow, but it was open to talent at a time when the looming Cold War had made the need to find the best and the brightest a national emergency. John Kenneth Galbraith urged Conant to make a "stern attack on home and motherhood" if he hoped to avail the nation of its female talent. Conant replied:

> *My case for the recommendations for the academically talented was very largely based on national need. If we were not living in such a grim world, I doubt I should advocate the high school program I recommend in my report. From the academically talented will come the future doctors, engineers, scientists and scholars, as well as . . . business executives. . . These professional people will be 97% men.*[38]

Conant wanted to limit access to selective colleges to high school students in the top 15 to 20 percent in terms of aptitude. He was concerned, however, that minorities and the poor might become easy targets for the communists. He said as much in his 1961 book, *Slums and Suburbs*,[39] in which he proposed liberal and professional education for the best and indoctrination for the rest. He wrote:

> *I do not have to remind the reader that the fate of freedom hangs very much in the balance. Our success against the spread of communism in no small measure depends on the successful operation of our own free society. These young people are my chief concern especially when they are pocketed together in large numbers within the confines of the big city slum . . . What can words like "freedom," "liberty" and "equality of opportunity" mean to these young people? With what kind of zeal and dedication can we expect them to withstand the relentless pressures of communism?*[40]

Conant's meritocratic system got a huge boost from the Cold War and from an economy that continued to demand more college education. He proposed his system as a means to fight the communists in the same way his Puritan ancestors promoted literacy as a means to make the scriptures accessible and thereby fend off false prophets and papism. His 1948 best seller, *Education in a Divided World: The Function of the Public Schools in Our Unique Society*,[41] had articulated the establishment view that education was the meritocratic "engine of democracy," critical to an upwardly mobile, well-informed, economically powerful society that

ultimately would defeat communism in the global contest of cultures.

In Conant's vision of the comprehensive high school, 80 to 85 percent of students were not college material, and represented the future members of the working class. They needed courses like English, history, and civics, but only to acquaint them with the individualist heritage found at the root of the American Creed, so they would reject the alternative offered by communism. Conant believed these non-college-bound students also needed to be enrolled in vocational programs that would lead them to have economic autonomy and a stake in the capitalist system.

Those in the 15 to 20 percent chosen for the meritocratic elite would continue on to liberal arts colleges for more general education. They then would move on to graduate and professional schools, to hone their ability to apply knowledge.

Conant's vision was not just steeped in an American idea that traces back to the Puritans. It also evoked a Western idea that traces all the way back to Plato's concept of a government by philosopher kings, who alone truly understood the true, the good, and the beautiful. Although a consistent strand in American thought, it is most famously associated with Thomas Jefferson. In 1813, Jefferson wrote to Adams:

> *There is a natural aristocracy among men. The grounds of this are virtue and talents. . . The natural aristocracy I consider as the most precious gift of nature for the instruction, the trusts, and the government of society. . . May we not even say that the form of government is the best which provides the most effectually for a pure selection of these natural aristocracy into offices of governments?*[42]

John Adams' return letter was prophetic:

> *Your distinction between natural and artificial aristocracy does not appear to me well founded . . . both artificial aristocracy, and monarchy, and civil, military, political and hierarchical despotism have all grown out of the natural aristocracy of virtue and talents. We, to be sure, are far remote from this. Many hundred years must roll away before we shall be corrupted.*[43]

The argument between Jefferson and Adams still applies. There is little doubt, however, that Jefferson's perspective became the organizing principle for American education in the latter half of the twentieth century.

The hierarchical concept of educational adequacy has been challenged, primarily because it became the source of race- and class-based tracking. As the importance of education grew alongside the nation and its industry, people became more mindful that educational inequity existed, with the differences in quality between racially segregated public schools standing as a glaring example. Legal challenges to the segregationists' argument that public schools can be "separate but equal" led to the Supreme Court's *1954 Brown v. The Board of Education of Topeka* ruling, which stated:

> *[E]ducation is perhaps the most important function of state and local governments. Compulsory school attendance laws and the great expenditures for education both demonstrate our recognition of the importance of education to our democratic society. It is required in the performance of our most basic public responsibilities, even service in the armed forces. It is the very foundation of good citizenship. Today it is a principal instrument in awakening the child to cultural values, in preparing him for later professional training, and in helping him to adjust normally to his environment. In these days, it is doubtful that any child may reasonably be expected to succeed in life if he is denied the opportunity of an education.*[44]

Yet in continued legal battles over state spending on education, courts have held that no right to educational adequacy exists in the U.S. Constitution. In the U.S. Supreme Court's landmark 1973 *San Antonio v. Rodriguez* decision, the majority of justices made this point clear. The majority opinion explicitly stated: "Education, of course, is not among the rights afforded explicit protection under our Federal Constitution. Nor do we find any basis for saying it is implicitly so protected."[45]

This declaration in *San Antonio v. Rodriguez* stood on the wrong side of history. It starkly opposed the American belief system's reliance on education as the foundation of a functioning and fair democracy.

Although the *Rodriguez* plaintiffs failed, other litigation challenging school financing as inequitable met with some limited success, bringing about increases in minimum spending levels to help close spending gaps.

The success of such challenges was limited, however. By the early 1980s, the defenders of the status quo were prevailing most of the time. They easily beat back general appeals to state constitutions' due-process and equal-protection clauses, appeals easily rejected based on the Supreme Court's reasoning in *San Antonio v. Rodriguez*. The cases had some success in creating spending floors, but no luck in lowering spending ceilings. They suffered from their inability to establish clear links between differences in funding levels and differences in educational outcomes and quality. Financial equity is difficult to define without some sense and measure of sufficiency for a particular purpose.

A turning point came with the Kentucky Supreme Court's 1989 decision in *Rose v. Council for Better Education*. It marked a move away from the narrow focus on equity in K–12 financing and a return to a standard of sufficiency based on educational outcomes and the purposes of K–12 education. In its *Rose v. Council for Better Education* ruling, the Kentucky court invalidated the entire state system of education. The court then went on to hold that an efficient education would be measured by its sufficiency in achieving a broad set of learning and labor market student outcomes after graduating from the K–12 system:

> i. Sufficient oral and written communication skills to enable students to function in a complex and rapidly changing civilization;
>
> ii. Sufficient knowledge of economic, social and political systems to enable the student to make informed choices;
>
> iii. Sufficient understanding of governmental processes to enable the student to understand the issues that affect his or her community, state, and nation;
>
> iv. Sufficient self-knowledge and knowledge of his or her mental and physical wellness;
>
> v. Sufficient grounding in the arts to enable each student to appreciate his or her cultural and historical heritage;
>
> vi. Sufficient training or preparation for advanced training in either academic or vocational fields so as to enable each child to choose and pursue life work intelligently; and
>
> vii. Sufficient levels of academic or vocational skills to enable public school students to compete favorably with their counterparts in surrounding states, in academics or in the job market.[46]

Beginning with the Kentucky case, the tide turned. Plaintiffs began prevailing in most cases, mainly because the courts' focus was shifted from broad equal-protection and due-process claims to financial equity in complying with specific provisions in state constitutions related to states' obligation to bring about certain educational outcomes. In this new phase of defining educational adequacy, "adequate" meant the achievement of some purpose—and the provision of adequate resources to get there. It presumed educational attainment and achievement attached to some level of functioning in society.

At the national level, the shift in focus from equity in K–12 finance to adequacy in functional outcomes had already begun, with the publication in 1983 of the report *A Nation at Risk*[47] and the standards-based K–12 reform movement that it sparked. The school-finance reform movement that began with the *Rodriguez* case sought to establish quantity-based financial criteria attached to the cost of inputs. The standards-based reform movement, by contrast, has sought at the state and national level to assess educational

adequacy using quality-based criteria that focus on the cost of achieving functional outcomes.

The New Adequacy Standard: General Preparation and Career Exposure in K–12 Education Leading to Postsecondary Education and Training for All

As the economy's skill requirements grew in the latter half of the nineteenth century and early twentieth century, K–12 education came to be seen as increasingly important in providing access to gainful employment. Americans had gradually accepted the idea that education through high school was key to individual flourishing and the proper functioning of a democratic system of government. The growing public support for K–12 education had led the nation to build on compulsory education through high school as a right of the people and the responsibility of the states. By the mid-twentieth century, the United States had a robust system of universal public secondary education and Americans were the most educated people in the world.[48] By 1950, only 6.2 percent of Americans had college degrees[49] and the vast majority of American workers who joined the middle class in the postwar industrial economy did so with a high school diploma or less.

The nation's strong educational achievements during the middle of twentieth century helped fuel the industrial economy and helped the United States cement its status as the most prosperous nation on earth, with robust economic growth and declining levels of inequality.[50] In response to the Soviet Union's 1957 launch of *Sputnik*, the Earth's first artificial satellite, the United States scrambled to strengthen secondary education further. The National Defense Education Act of 1958 provided new funds to improve American schools and to promote postsecondary education, focusing heavily on science and technology.[51] Later, the Elementary and Secondary Education Act (ESEA) of 1965 further solidified federal funding for K–12 education.[52]

James Bryant Conant's hierarchy of educational adequacy, which had held up pretty well through the 1960s, began to fall apart with the decline of the blue-collar economy in the 1970s. Various trends during that decade began transforming an industrial-production economy into a post-industrial, knowledge- and skill-based service economy.[53] As a result of such developments, the share of the workforce employed by production industries—such as manufacturing, construction and natural resources—declined from nearly 50 percent of all workers in 1947 to just 19 percent in 2016. At the same time, the share employed in high-skill service industries—including health care services, consulting and business services, education services, and government services—grew from 28 percent of the workforce in 1947 to 46 percent in 2016.[54] During this period, the share of jobs held by workers with a high school diploma or less dropped to 34 percent, while the share of jobs held by workers with some education or training beyond high school grew to 66 percent.[55] This skill-biased technological change has pushed the college wage premium—the difference between the average annual pay of college graduates and that of high-school graduates—from 40 percent in the 1970s to 67 percent today.[56]

In the 1970s, most American workers had a high school diploma or less, and almost a third were high school dropouts. Most of these high-school graduates and high-school dropouts were in the middle class. Since the 1980s, the difference in lifetime earnings between someone with a college degree and someone with a high-school diploma has doubled to an average difference of $1 million, even as the number of college graduates has quadrupled.[57] This accounts for 70 percent of the increase in earnings inequality since the 1970s. Between 1970 and 2007, the share of high school graduates who reached the middle class declined from 46 percent to 33 percent.[58] Only three out of ten workers with no more than a high school education, mostly men, are still able to reach the middle class.[59]

By the 1980s, skills and the economic competitiveness of American education moved to the forefront of policy discussions. *A Nation at Risk* had sounded an alarm about the urgent need to reform the nation's mediocre education system. The report faulted the system for leaving too many young people without the skills to earn a living, which placed

the country in a weak position to compete economically with other nations around the globe. Other countries were quickly overtaking the United States in terms of educational attainment and quality of education.[60]

The national response to *A Nation at Risk* was the signal moment in the shift to a K–12 system that sought to provide general education for all, and the shift to the view that postsecondary education represented a legitimate standard of adequacy. Helping it capture attention, *A Nation at Risk* contained breathless prose and a narrative that paralleled Conant's nationalist call to arms:

> *Our nation is at risk. Our once unchallenged preeminence in commerce, industry, science, and technological innovation is being overtaken by competitors throughout the world . . . [W]hat is at risk is the promise first made on this continent . . . that all children . . . can hope to attain . . . gainful employment.*[61]

The shift to a new social and economic standard of educational adequacy pegged to some form of postsecondary education and training, rather than just a high-school diploma, spelled the end of traditional vocational education in high school. The "college for all" mantra overtook the American high school curriculum. Following the publication of *A Nation at Risk*, high-school curriculums universally became more academically rigorous, featuring more course requirements in math, science, and the liberal arts. Home economics and vocational education fell by the wayside.

A Nation at Risk recommended that states strengthen their high school graduation requirements to include the "Five New Basics": four years of English, three years each of mathematics, science, and social studies, and half a year of computer studies.[62] The new model tends to focus on academic requirements and career exposure through a limited number of Career and Technical Education (CTE) courses, as well as experiences such as internships. The new high school claims to make students "college and career ready," but there is very little relationship between high school curriculums and college majors, let alone career pathways.

In the 1990s, policymakers increasingly concentrated on strengthening the connection between education and jobs by connecting classroom academic learning with work-based professional learning. School-to-work initiatives designed to strengthen the pathway from secondary education to employment increasingly gained momentum, and were at the core of the *School-to-Work Opportunities Act of 1994*.[63]

In the decades since the publication of *A Nation at Risk*, such trends have only become starker. Compared to 1982, the share of high school students now who take the Five New Basics requirements is five times higher, encompassing nearly a quarter of all students.[64] On the other hand, the share of students who take at least three career-related courses has fallen from roughly a third to about a fifth of high school students.[65] Of the roughly twenty-seven required high school credits, twenty-one credits are dedicated to academic requirements.[66] High schools, once looked to for the preparation of the vast majority of students for the jobs not requiring a college degree, are now responsible primarily for preparing people for college. American colleges have become the de facto workforce development system. They are expected to provide students career preparation, either through a mix of specific and general education, or through programs that focus narrowly on specific education and culminate in certificates, industry-based certifications, or other vocational credentials. Little career preparation takes place in today's high school, and youth employment programs account for just pennies out of every $100 America spends on educating and training young people.

In the twenty-first century, the policy conversation has shifted from envisioning two pathways, "college or careers," to envisioning an increasingly interconnected concept, "college and careers."[67] Education and training beyond high school is regarded now as essential for individuals to secure an economically viable career with which they can support themselves and their families.[68] College increasingly is being viewed as one of the few pathways for individuals to gain job-related skills that lead to employment and competitive, family-sustaining wages.

The college-for-all rhetoric has conditioned the public to believe that high school is no longer an acceptable minimum for an adequate education. Economic change has cemented this consensus in place. The 2005 National Education Summit on High Schools recognized this reality when it stated, "It is no longer enough to ensure that all students are proficient at each grade level. It is time for every student to graduate both proficient and prepared for the real demands of work and postsecondary learning."[69]

The 2006 Commission on the Future of Higher Education, commonly known as the Spellings Commission, finally arrived at the inevitable end game of education reform by endorsing postsecondary education for all. It argued: "[E]veryone needs a postsecondary education. Indeed, we have seen ample evidence that access to postsecondary education is increasingly vital to an individual's economic security."[70]

President Obama's administration followed suit with his first address to a joint session of Congress, when he said, "I ask every American to commit to at least one year or more of higher education or career training. This can be community college or a four-year school; vocational training or an apprenticeship."[71]

As was the case of the shift from grade school to high school in the twentieth century, the twenty-first century shift from high school to postsecondary education and training has resulted in greater access to higher levels of education. Regretfully, in an echo of the past, the latest expansion of access has been followed by stratification and tracking. The nation advocates access to postsecondary education and training "for all," but it increasingly relegates less-advantaged students to overcrowded, underfunded, open-access two-year and four-year colleges, along with the non-degreed sector. The consequences, as measured by social and economic outcomes, are predictably negative.[72]

In another echo of the past, the twenty-first century shift in the adequacy standard—from high school to postsecondary education and training—has produced a great divide between the advocates of degrees and the advocates of a more specific, career-focused approach. In the evolution of educational adequacy, social and economic justice issues have constantly come up. These issues have centered on access to higher levels of educational attainment and the mix of general and specific education among the more and less advantaged. As a rule, progress has been marked by a dynamic in which our society's advantaged members lead the way in terms of overall access to the richest mix of general and specific education at the bachelor's degree level and to specific graduate education in elite fields of study.

The nation's past shift from universal attainment of grade school to universal attainment of high school initially relegated the less advantaged to vocational preparation and the advantaged to college. Similarly, the current shift from universal high school to universal postsecondary access relegates the least advantaged to sub-baccalaureate education and training, with an emphasis on vocational preparation for middle-wage jobs.

At this early juncture, it is probably safe to say that there is still a theoretical and aspirational consensus on postsecondary adequacy—it is centered on the mix of general and specific education typical of American two-year and four-year degrees, and holds the bachelor's degree as the gold standard. The call for more postsecondary education demands that degrees have both economic and non-economic value. The public tends to agree with experts' views on this front. Most want degrees for themselves or their children. Growing numbers agree that a high-school diploma is no longer sufficient to meet a twenty-first century standard for human capital development in modern economies, or to flourish in a more diverse, complex, turbulent world.[73] It has become commonplace to assert that the bachelor's degree is more and more the gold standard for the transition from youthful dependency to adult independence as a worker and as a fully empowered individual and citizen. Others, who shy away from calling for a bachelor's degree for all, nonetheless, call for at least an associate's degree for all, suggesting that "fourteen has become the new twelve" in our thinking about the minimum number of years of education needed.[74] The associate's degree has growing support in the political arena, because it is seen as having legitimacy, with the preferred mix

of general and specific education characteristic of American degrees. Also, to some extent, it provides a pathway to the bachelor's degree.

This distinctive commitment to the mix of general and specific education is the liberal education, which is the characteristic signature of American college degrees. Both the two-year and four-year college degrees at the core of the American system are composed of fields of study. Classes in those fields of study represent 30 to 40 percent of the academic credits in the curriculum for each credential and another 60 to 70 percent of credits in the curriculum are in general education across a broad variety of fields. This preferred hybrid of specific and general education is a typical element of two-year and four-year college degrees in the American postsecondary education system. As the Association of American Colleges and Universities points out, it represents:

> *An approach to college learning that seeks to empower individuals and prepare them to deal with complexity, diversity, and change. This approach emphasizes broad knowledge of the wider world (e.g., science, culture, and society) as well as in-depth achievement in at least one specific field of study.*[75]

The argument for the hybrid of "general and specific education for all" rests on two pillars. The first is the idea that a combination of general and specific coursework provides nonmonetary benefits in areas such as health and political participation, and also makes one a fully rounded, holistically educated, flourishing individual.[76]

The second pillar is research that shows there is an optimal mix of general and specific education that provides greater economic value than either general or specific education alone, because it prepares students both to enter the labor market and to adapt their skills in response to changing demands.[77] General education adds economic value by enabling people to adapt to changing technologies and demands for new skills. Taken together, the benefits of mixing general and specific education accrue to both the individual, by widening opportunities, and the economy as a whole, by enhancing flexibility and empowering technological adoption.[78]

At the same time as liberal education has become more attractive because of economic change, more specific career-related education has increased in value as well. The doubling of the wage premium for the average bachelor's degree is not the only dramatic trend since the 1980s. The variation in earnings by postsecondary field of study has more than quadrupled during that time. This demonstrates that the relationship between fields of study and their connection to particular career pathways is an increasingly important determinant of future earnings. Sometimes less education in a high-paying field of study is worth more than more education in a low-paying field of study. This is why more than 40 percent of people with bachelor's degrees make more than people with graduate degrees; 28 percent of associate's degrees lead to higher earnings than the average bachelor's degree; and many certificate holders make more than an average worker with an associate's degree or a bachelor's degree.[79]

In response to the rising value of education related to specific careers, many support more specific education, both within degree programs and in the form of programs that offer non-credit customized training and non-degree credentials, such as certificates, industry-based certifications, and badges. The current advocates of specific education tend to emphasize the growing economic mission of education. Specific education in particular majors or fields of study adds economic value by preparing individuals with particular occupational skills that prepare them to enter high-skill, in-demand career pathways.

There is a wide and growing variation in the lifetime economic value of specific fields of study. The growth of earnings associated with specific education, and the growing variation in earnings among specific fields, reflects both the increasing relative value of education beyond high school and increasing texture in the relationship between postsecondary education and the economy. Transparency regarding the connection between postsecondary programs and labor markets has become more important as people seek to

choose among a growing diversity of both postsecondary programs of study, and modes of delivery aligned with an increasingly complex set of credentials and career pathways. Some indicators of that growing diversity include:

+ the number of career fields identified by the U.S. Census Bureau increased from 270 to 840 between 1950 and 2010;[80]

+ the number of colleges and universities grew from 1,850 to 4,720 between 1950 and 2014;[81] and

+ the number of different programs of study offered by postsecondary education and training institutions grew from 410 to 2,260 between 1985 and 2010.[82]

In this new environment, programs and curricula matter more, and institutions matter less. The economic value of postsecondary education and training has less to do with institutional brands and more to do with growing differences, in both cost and labor-market value, among an expanding array of programs in specific fields.

Measuring Up: Creating Standards for Educational Adequacy

Education is the preferred response in the United States to social and economic change, as opposed to expansion in other aspects of the welfare state.[83] Education empowers individuals as responsible agents in dealing with change, and it minimizes government control. It also plays an important role as an arbiter in balancing market forces with democratic commitments to equal opportunity.

College offers individuals the opportunity to attain entry into the middle class. At the same time, however, it perpetuates socioeconomic inequalities, including vastly divergent economic and life outcomes between racial, ethnic, and class groups in American society.[84] Regardless of whether postsecondary education comes under the label of college, K–14, or career and technical education (CTE), it is clear that today people need access to affordable education and training beyond high school, and that the economy needs more educated workers to fill its new high-skill jobs and to carry out the next cycle of innovation and growth.

A new consensus is gradually emerging as we enter the initial decades of the twenty-first century. We agreed, beginning with the *A Nation at Risk* report, that every American should have access to a solid general education in the K–12 system and at least some level of postsecondary education or training. There is a general recognition that while the postwar divide between college preparation and vocational preparation is not acceptable, attention to career pathways still should be an element of the K–12 system. The new consensus points toward a K–16 system that is heavy on general education in elementary school, and that through middle school, high school, and college, gradually increases exposure to specific careers and direct preparation for them.

At the postsecondary level, these forces take us back to the same set of choices that Conant and his generation faced in contemplating who gets specific and general education in a society beset, at its very core, by race, class, and gender inequality. The evolution of the American education system has shifted much of the tracking issue from high school to postsecondary education. In Conant's day, the issue was who gets the gold-standard mix of general and specific education in high school. College access was generally presumed to be the province of the elites. In our time, the issue is who gets the gold-standard mix of general and specific education at the postsecondary level.

Currently in the United States, the need for a strong and universal general education through high school is widely accepted. After high school, however, a disproportionate share of the least advantaged get specific education in sub-baccalaureate fields, while advantaged students go on to the bachelor level. The most advantaged students then go on to elite specific training in graduate and professional school.[85]

As a result, the least advantaged get their most intense specific training in two-year colleges, and the advantaged experience their most intense, specific learning in graduate and professional school.

Defining adequacy in this evolving system is no small feat. Having no basis in the U.S. Constitution, the notion of adequacy, as a legal concept, rests on the gradual accretion of vague guarantees in state constitutions. The failure of nerve on the part of the Supreme Court in rejecting the plaintiff's plea for adequacy in *San Antonio v. Rodriguez* still frustrates efforts to establish a core political or legal commitment to build upon.

But higher education needs an outcome standard for adequacy. We argue that in a democracy with a market economy and little support for an extensive social safety net—as is the case in the United States—the means necessary for individual human flourishing comes, for the vast majority of citizens, from paid work. We argue that economic self-sufficiency is a necessary, though not sufficient, measure of the provision of an adequate education.[86]

We also favor establishing a labor-market standard for adequate outcomes, because the relationship between education and labor markets is especially important in the United States, due to our relatively modest welfare state and greater reliance on individual responsibility, both of which make the relationship between education and economic outcomes especially powerful. In work-based societies such as our own, the inability to get or keep jobs affects human flourishing and successful family formation, as well as political participation and healthy engagement with the civil society, culture, and community. As the psychologist Abraham Maslow observed in establishing his hierarchy of human needs more than seven decades ago, people must have their basic physiological and safety needs satisfied before they can devote their time and efforts to higher-level pursuits that culminate in the self-actualization, central to human flourishing.[87] As educational requirements increase on the job, the education system is asked, more and more, to take responsibility both for human flourishing and employability. If educators cannot fulfill their economic mission to help youths and adults become successful workers, they also will fall short in their cultural and political missions to create good neighbors, good citizens, and lifelong learners.

While labor market outcomes are not sufficient to assess educational adequacy alone, we argue that the focus on economic self-sufficiency, as a necessary condition for educational adequacy, is critical to advancing our discussion of adequacy. To date, this discussion has sidestepped the fact that people need education, and so they seek it out for the purposes of pursuing economic opportunity. For this reason, we argue that assessment of a program must start by measuring whether it provides economic self-sufficiency. We argue this for several reasons:

+ First, economic self-sufficiency offers a readily measurable threshold of labor market outcomes that program graduates are expected to achieve, instead of just common outcomes based on proxy measures. There are currently no standard measures of learning across different postsecondary settings. The Lumina Foundation's Degree Qualification Profiles for Associate's, Bachelor's and Master's degrees, which includes a process of "tuning" for specific fields of study, represents the most substantive effort to establish common outcomes at the program level for what students should know and be able to do.[88] While these efforts have led to more standardized definitions of learning outcomes, we are a long way from measuring learning in higher education programs concretely and consistently.

+ Second, the use of labor market outcomes as a standard provides a uniform incentive for all types of postsecondary education programs, without discouraging local experimentation or the innovation and customization of educational delivery, curriculum development, or faculty relations. In the end, it doesn't matter how the education is delivered, so long as it enables individuals to become self-sufficient and be able to cover the costs of obtaining it.

+ Third, an economic self-sufficiency standard puts the focus on programs of study,[89] rather than general institutional performance or overall attainment levels.

+ Fourth, labor market outcomes are an actionable policy lever that resonates at the state and federal level, as has been demonstrated by Gainful Employment regulations at the federal level and by states' incorporation of labor-market outcomes in performance-based systems for funding public colleges.

During the Obama administration, we saw the implementation of Gainful Employment regulations that reflected a growing concern that some postsecondary programs were not a wise investment for students. While the Trump administration is expected to scale back these regulations, other policy efforts at the state and federal levels seek to measure return on investment (ROI) through outcomes. These efforts will continue to move the conversation in the direction of labor market outcomes and economic value of higher education.[90]

Another argument for shifting focus to economic outcomes is that the policy process has already accepted them as a legitimate goal. Data connecting college programs to careers are increasingly available in statewide longitudinal data systems that connect student transcript data to earnings and career pathways. A few states—including Florida, Texas and Washington—began to connect postsecondary education transcript data and Unemployment Insurance (UI) wage records starting in the 1980s. Since 2007, the federal government has spurred further connections between K–12 education, postsecondary education, and wage record data systems by providing more than $700 million in grant funding for such efforts to forty-seven states and the District of Columbia.[91] As a result, forty-seven agencies in forty-two states currently link or plan to link postsecondary education records with workforce data relayed by wage records.[92] States vary substantially in terms of access to their data, the quality of their data, and their data infrastructure and tools. Some states will need to make more progress in terms of the accessibility and usefulness of their Statewide Longitudinal Data Systems (SLDS) data before those data can be applied toward assessments related to an economic self-sufficiency standard for different postsecondary programs of study.

Thus, while acknowledging numerous complexities, considerations, and necessary adjustments for real-world application, we propose a concrete foundational earnings standard that would signal economic self-sufficiency of postsecondary education and training programs. Our proposed standard is this: For a program to provide *economic self-sufficiency*, it should lead to earnings of above *$35,000 per year ten years after completing the program along with a sufficient earnings premium* over an average high school graduate during the course of those ten years *to cover the total costs of the program*. (The total costs must include net price and opportunity costs, as measured by foregone earnings for the period of enrollment.)

We propose an earnings standard rather than family income because education influences individuals' economic opportunity, and earnings is the best expression of that opportunity. While we recognize that family income, in some ways, better reflects individuals' economic conditions, the relationship between one's education and family income is far less direct or clear than the relationship between education and earnings. While a family of four will need more resources than a family of one to reach the middle class, and a family may have sources of income outside of job-based earnings, the relationship between education and decisions involving family formation, childbearing, and non-earning income is not strong or clear enough to include these factors in an educational adequacy standard.

We use an earnings floor of $35,000 here for a number of reasons. Primarily it is the entry point to the middle class.[93] This earnings floor is the minimum necessary to enter the middle four deciles of earnings as defined by full-time full-year workers aged 25 through 64, which we believe is a good place to start. (This, of course, does not preclude someone from earning in the top three deciles.) Furthermore, middle-class family income has been defined as starting at $50,000, which roughly equates to our earnings at the individual level.[94]

Further, a $35,000 annual earnings level is slightly above average living wages across different parts of the country.

This earnings level is approximately three times the poverty level for one person. It leaves a person with approximately $1,800 per month after rent of $800 per month and food costs of $350, the "high or liberal" menu cost estimate of the U.S. Department of Agriculture (USDA).[95] Taken together, these various metrics underpin our selection of $35,000 as a floor earnings level in beginning a conversation about economic self-sufficiency.

We present a simplified approach to give the reader a concrete grasp of how these principles can be applied to delineate economic self-sufficiency standard, underpinning educational adequacy. At the same time, we acknowledge that, to apply our concept of economic self-sufficiency to the real world, practitioners and policymakers will have to address numerous complexities and make adjustments appropriate to their local jurisdictions, institutions, and objectives. The report ends with discussion of some of these complicating issues, and suggests that a number of them can only be resolved with very subjective decisions or through social consensus.

For an Education Program to Be Adequate, Its Benefits Must Outweigh Its Costs

Our assessment of economic self-sufficiency is intentionally focused on labor market outcomes. It does not consider other outcomes of postsecondary education, such as learning or preparation for civic engagement, which are nonmonetary and, in many cases, currently difficult to measure. However, we recognize that these factors play an important role in higher education. Economic self-sufficiency is only part of the broad concept of educational adequacy, but we hold that it is a necessary and critical component.

For the purposes of defining that component, this report conceptualizes educational adequacy and economic self-sufficiency as follows:

Educational Adequacy = f (Economic Self-Sufficiency, Nonmonetary Benefits, Consumer Benefits, Experiential Utility)

Economic Self-Sufficiency = $\text{Earnings Premium}_{10\text{ years}}$ – (Direct Costs + Opportunity Costs) Earnings > $35,000/year

Economic self-sufficiency captures labor market benefits of postsecondary education that are important for many students and families and are the focus of this report.[96] These include an increased chance of employment, higher earnings, and a greater likelihood of working full-time and full-year, which grants access to employer-sponsored benefits, such as health insurance, retirement savings, and paid time off.

Nonmonetary benefits are not easily quantifiable, but make up an important part of the value provided by colleges to society and citizens. The nonmonetary benefits of college include: longer life expectancy; better health; lower likelihood of engaging in criminal behavior; greater political participation; a greater sense of civic responsibility; support for democratic institutions; stronger social cohesion; greater tolerance for others with a lower likelihood of involvement in socioeconomic and ethnic conflicts; more innovation; an enhanced propensity for lifelong learning; and an improved ability to deal with ethical issues raised by new technologies.[97]

Consumer benefits derive from educated individuals becoming better-informed consumers. As a result of information-processing and decision-making skills developed through higher education, such individuals make better researched, more informed, more reasoned decisions about what to purchase and how much to pay for it.[98]

Experiential utility represents the value students obtain from the college experience itself. This is what economists call the consumption—rather than investment—aspect of college. This encompasses the enjoyment and personal growth students get from social interaction with other students, from interaction with faculty, from the opportunity to satisfy their intellectual curiosity through lectures, discussions, and research, from opportunities to participate in extracurricular activities, and from access to recreational facilities, libraries and other campus amenities.

Earnings Premium$_{10\,years}$ is the amount by which postsecondary program graduates' earnings exceed high school graduates' earnings, evaluated over the first ten years after graduation (the duration of the standard repayment period for federal student loans).[99] It represents the additional amount that college graduates are paid as the result of attaining a postsecondary credential and the skills that such a credential encompasses.

Direct costs are charges that students and/or their parents have to pay for their education either at the time of taking courses or through student loan borrowing, captured in net price.

Opportunity costs result from students giving up other things they could have done with their time if they were not attending college. Opportunity costs are captured in forgone earnings (based on wages of similarly aged workers with a high-school diploma) during the period when students attend college.

An Adequate Education Must Allow Graduates to Attain Middle-Class Earnings, and Cover Its Costs

The two-part economic self-sufficiency test we present in this report consists of the following criteria:

+ *Part 1:* Are graduates of a postsecondary education program able to earn family-sustaining wages greater than $35,000 per year for full-time, full-year (FTFY) workers?[100]

+ *Part 2:* Are graduates able to earn a sufficient premium over an average high school wage in the first ten years after completing the program to cover the costs (direct and opportunity) of the program?

This dual test would be applied to *graduates* who work full-time, full-year. Their earnings would be averaged at the *program level*, acknowledging the importance of fields of study and program completion to labor market outcomes.[101] Graduates are used as the base for this standard because graduates have received a credential, a tangible outcome. This model offers the flexibility to use other bases, such as examinations of all students ten years after separation from the institution, or all students who have taken enough coursework to meet a certain minimum credit threshold. Practitioners can choose to use other bases as appropriate, given data availability and local dynamics. But this report does not extend its analysis to non-completers, because they did not receive a credential. The logic is simple: consider how clinical trials for drugs do not include results for participants who received an incomplete dosage, and whose condition therefore does not properly reflect effectiveness of treatment. Likewise, inclusion of non-completers—some of whom never complete a single course and or may only attempt one course at a community college—would not accurately reflect educational adequacy of the analyzed programs of study. This is not to say that completion rates are not important or that institutions should not be held accountable for promoting completion of credentials. We simply feel that it would be a stretch to hold programs and institutions accountable for labor market outcomes of students who barely studied any of the programs' offerings.

Any endeavor to establish an appropriate threshold for standard outcomes needs a starting point. In this case, we propose as the first part of our two-part economic self-sufficiency threshold, the family-sustaining earnings test, annual earnings greater than $35,000. As we stated earlier, the $35,000 per year is not a random figure. It is the thirtieth percentile of earnings for prime-age (25–64), FTFY workers—an entry point into middle-class standards of living.[102]

The assumptions for calculating the second part of our test are more complicated, because educational programs vary widely in cost. While an associate's degree and a bachelor's degree may both get students to the earnings level of $35,000 per year, a bachelor's degree has higher costs—the direct costs of tuition, fees, and other charges; and the opportunity costs, because it takes longer, typically twice the time, to earn a bachelor's degree as opposed to an associate's degree. The opportunity cost we use in this report is based on standard time to completion (two years

for an associate's degree, four years for a bachelor's degree) and on the assumption that students are studying full-time and not working while in school. We acknowledge that these ideal conditions are not met in the majority of student cases today. Often, students combine work and studies at the same time and, as a result, take longer to complete. The earnings of these students from working while in college somewhat balance out the opportunity costs associated with taking longer to graduate; so our standard assumptions remain viable for demonstration purposes. However, practitioners seeking to apply the model will need to adjust time-to-completion and employment factors based on the circumstances of a majority of students at local institutions.

The second part of the two-part economic self-sufficiency test is whether graduates of a specific program earn enough of a premium over high school graduates' earnings in the first ten years after graduation to cover the costs of the program. For example, we find that, on average, the earnings premium for an associate's degree holder over a high school graduate is $9,000 per year. Over ten years, those earnings premiums add up to $90,000. The average net price for a community college is $7,000, which, over two years, adds up to direct costs of $14,000. In addition, the foregone annual earnings, based on median wages of high school graduates, are $24,000 per year, for a total of $48,000.[103] This translates to a total cost for an associate's degree of $62,000. Since the total earnings premium over ten years ($90,000) is more than the total costs of the program ($62,000), the average associate's degree program fulfills the second part of the economic self-sufficiency test (see Table 1).

The bachelor's degree generally takes twice as long to complete as an associate's degree, which means that the opportunity cost for a typical bachelor's degree program is double that for an associate's degree program ($96,000 versus $48,000). We find that the direct costs for a bachelor's degree programs are also more than $10,000 extra per year, based on the average net price at four-year colleges and universities ($17,700 versus $7,000), resulting in an average total cost of $166,800 for a bachelor's degree (compared to $62,000 for an associate's degree). Thus, the earnings premium for bachelor's degree holders has to be higher to cover the costs in ten years. For an average bachelor's degree, we find that the earnings premium is higher: $24,000 a year over high school graduates, which adds up to $240,000 over ten years (see Table 1). Since the accumulated earnings premium of $240,000 is more than the direct and opportunity costs of $166,800, we find that an average bachelor's degree program also fulfills the second part of the economic self-sufficiency test.

While, on average, associate's and bachelor's degrees provide a sufficient earnings premium over ten years following graduation to cover the costs of the program, the ability of individual programs to meet this dimension of economic

TABLE A1

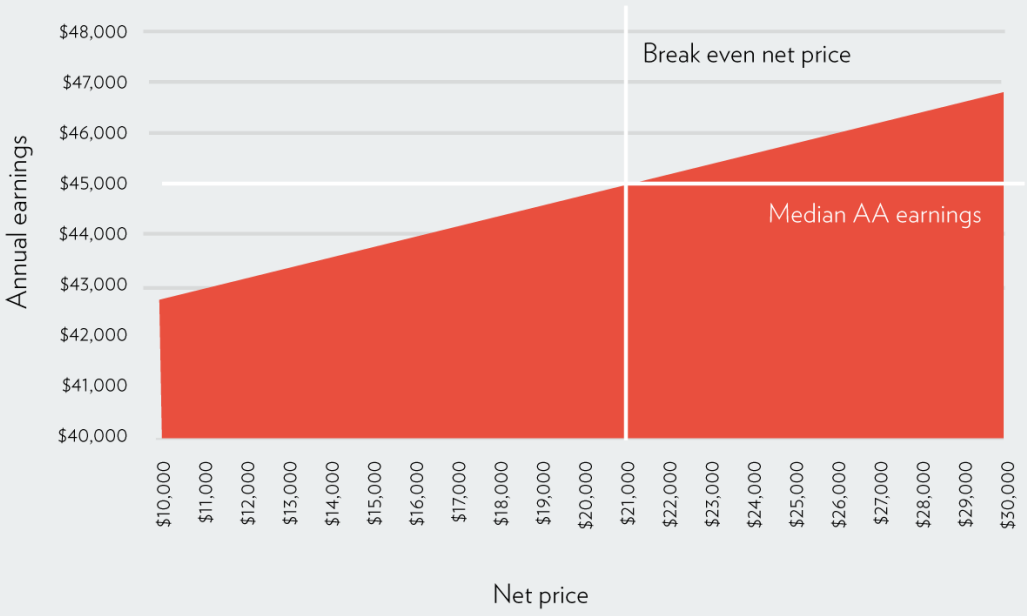
Full-time, full-year workers by whether they attain earnings above $35,000 annually by age 35, by degree type.

	Annual earnings premium	Earnings premium over ten years	Annual net price	Direct cost	Forgone annual earnings	Opportunity cost	Total cost
Assoicate's Degree	$9,000	$90,000	$7,000	$14,000	$24,000	$48,000	$62,000
Bachelor's Degree	$24,000	$240,000	$17,700	$70,800	$24,000	$96,000	$166,800

Source: Georgetown University Center on Education and the Workforce analysis of Current Population Survey data, 2015 and Digest of Education Statistics tables, table 331.30, 2015.
Note: For illustrative purposes, these simplified examples do not consider interest on the debt, the value of alternative investments, nor the present value of future earnings streams; these factors would need to be included in the concrete evaluation of economic self-sufficiency for specific academic programs of study. The earnings used in estimating earnings premium are full-time, full-year (FTFY) earnings for workers aged 25–59. The earnings used to estimate forgone annual earnings are FTFY earnings for workers aged 18–24, with a high school diploma as their highest educational attainment.

TABLE 1

AA average adequate annual earnings based on annual net price

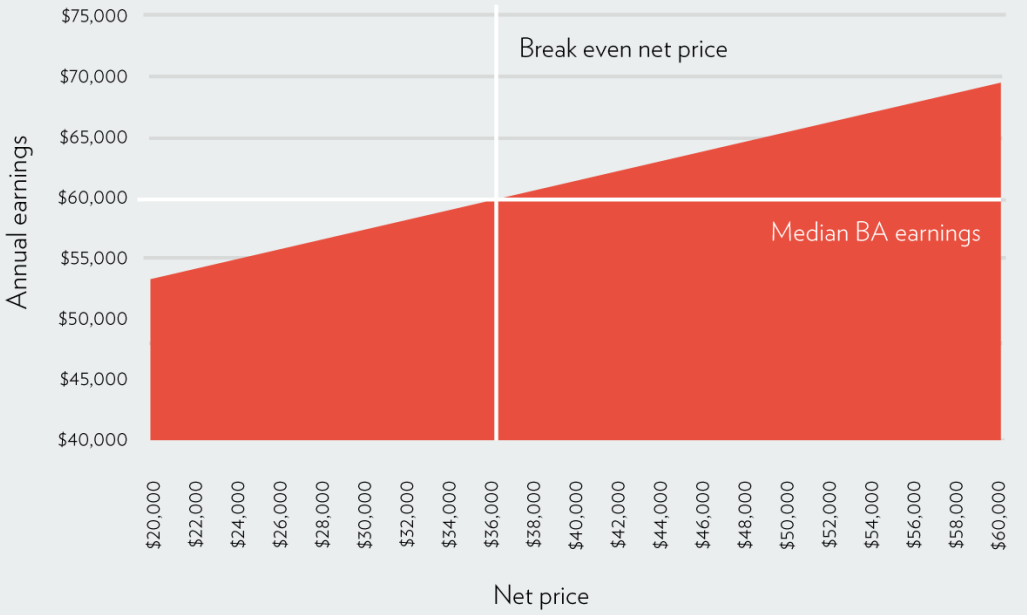


Note: For illustrative purposes, these simplified examples do not consider interest on the debt, the value of alternative investments, nor the present value of future earnings streams; these factors would need to be included in the concrete evaluation of economic self-sufficiency for specific academic programs of study. The earnings used in estimating earnings premium are full-time, full-year (FTFY) earnings for workers aged 25–59. The earnings used to estimate forgone annual earnings are FTFY earnings for workers aged 18–24, with a high school diploma, as their highest educational attainment.

Source: Georgetown University Center on Education and the Workforce analysis based on Current Population Survey data, 2015 and Digest of Education Statistics tables, table 331.30, 2015.

TABLE 2

BA average adequate annual earnings based on annual net price



Note: For illustrative purposes, these simplified examples do not consider interest on the debt, the value of alternative investments, nor the present value of future earnings streams; these factors would need to be included in the concrete evaluation of economic self-sufficiency for specific academic programs of study. The earnings used in estimating earnings premium are full-time, full-year (FTFY) earnings for workers aged 25–59. The earnings used to estimate forgone annual earnings are FTFY earnings for workers aged 18–24, with a high school diploma, as their highest educational attainment.

Source: Georgetown University Center on Education and the Workforce analysis based on Current Population Survey data, 2015 and Digest of Education Statistics tables, table 331.30, 2015.

self-sufficiency standard depends on the relationship between the program's net price and the annual earnings of its graduates. The higher the net price for a program, the greater the earnings that graduates need to attain economic self-sufficiency standard (see Figure 1).

Spending Levels Affect Educational Quality, but Alone Do Not Guarantee Educational Adequacy

The growing importance of postsecondary education has raised the question of appropriate funding levels for public institutions in general, and community colleges specifically. The takeaway lesson from the higher return on investment earned by pursuing a bachelor's degree rather than an associate's degree might be that the more resource-intensive the program, the better. In some ways, this is true, but the level of spending is a very simplified metric: how money is spent may be as important as how much is spent. Furthermore, programmatic variations at otherwise similar institutions—as well as other factors—can lead to vastly different outcomes, raising questions of how to best value postsecondary institutions and programs.

Better-funded Colleges Seem to Offer Better Results

The correlation between spending levels and quality of outcomes is fairly well established. The 468 most selective four-year colleges, which spend more than twice as much per student on instruction compared to open-access two- and four-year colleges ($13,400 versus $6,000), have substantially higher completion rates (82 percent versus 49 percent) and greater graduate degree attainment among their graduates (35 percent versus 21 percent), and their graduates have higher annual earnings ten years after graduation ($67,000 versus $49,000).[104] Yet, whether these disparities in outcomes are primarily the result of differences in spending is a subject of debate in the field.

Researcher Stacy Dale at Mathematica and Princeton economist Alan Krueger, looking at a very narrow group of highly selective schools, suggest that the majority of positive outcomes are explained by self-selection of students with higher abilities into the selective schools, and not by the schools themselves. This study suggests, though, that selectivity has positive impact on minority students, possibly implying that higher resources benefit those who have been without support historically.[105] This argument about self-selection, often attributed to American economist Andrew Michael Spence in the context of signaling,[106] is widely debated, but intuitively sensible in terms of selective institutions. Students from privileged backgrounds are less likely to benefit from marginal differences in resources, while for disadvantaged students the differences are not small (cumulatively) and, hence, resources have an impact. On the other hand, recent research suggests that two-thirds of differences in graduation rates can be attributed to the variance in resources.[107]

Stanford economist Raj Chetty and colleagues show that colleges that spend more per student are better at moving students from the bottom quintile of (parental) household income to the top quintile. Colleges in the bottom quartile of instructional spending per student spend on average $1,900 per student and have a 12 percent success rate in moving students from the bottom quintile of household income to the top quintile, with average earnings for all former students of $31,000 at ten years after first enrollment (based on College Scorecard data). On the other hand, colleges in the top quartile of instructional spending per student spent on average $10,000 per student, and have a 31 percent success rate in moving students from the bottom quintile of household income to the top quintile, with average earnings of $45,000 at ten years after first enrollment.[108]

Still, the relationship between spending and outcomes is not linear or clear-cut. Community colleges in the top quartile of instructional spending compared to those in the bottom quartile of instructional spending do not have significantly different success rates of moving students from the bottom quintile of household income to the top quintile. Simply stated, the relationship between costs and outcomes is not strong enough to tell policymakers where best to spend the next dollar. On the other hand, at least when it comes to addressing economic performance, an outcomes criterion is quite clear.

Shifting Focus from Postsecondary Institutions to Programs of Study Adds to the Complexity of Determining What It Costs to Provide Adequate Education

The key to the value of postsecondary education lies in learning and earning at the program-of-study level. While more education on average yields more pay, what a person makes depends on what that person takes—that is, their college major.[109] Sometimes less education in an in-demand field offers higher value than more education in another field. Twenty-eight percent of associate's degree holders make more than an average bachelor's degree holder.[110]

The value of programs of study varies substantially, based on the alignment between particular curricula and regional labor market demand.[111] The costs of delivering different programs of study also vary substantially. A highly technical program that requires the acquisition and maintenance of expensive equipment and the employment of faculty with particular skills will cost a college more to administer than a program that typically involves only classroom instruction. Some colleges charge students differently based on program of study, whereas others do not. In some states, public colleges are not allowed to charge students differently by program of study, even when there is a wide variation in the costs to deliver those programs.

A High Degree of Variation in Postsecondary Education Makes Estimating Costs Challenging

As the Supreme Court majority stated in its opinion in the *San Antonio v. Rodriguez* (1973) decision:

> *On even the most basic questions in this area the scholars and educational experts are divided. Indeed, one of the major sources of controversy concerns the extent to which there is a demonstrable correlation between educational expenditures and the quality of education.*[112]

Today, there is not much more consensus or clarity on the impact of expenditures on educational outcomes, at least when it comes to postsecondary education. In comparison to K–12 education, postsecondary education has much greater variability in how different programs are organized and delivered, little standardization in curriculum, and almost no standardized proficiency tests or standardized exit exams.[113] That is why we define an adequate education in terms of a common metric of labor market outcomes that cuts across fields.

It is difficult to guide policymakers and administrators as to where precisely to invest the next dollar in order to achieve the greatest impact on the provision of an adequate postsecondary education.

Comparing two community colleges, for example, can provide an illustration of how similar institutional costs can have very different outcomes. In 2000, Richland Community College in Illinois and Collin County Community College in Texas both spent around the same amount ($1,892 to $1,893) per FTE (full-time equivalent) student. However, a decade later, those who attended Richland Community College earned a median wage of $26,900 per year, whereas those who attended Collin County Community College earned $35,400 per year.[114] In part, demand-side factors arising from differences in local economies may have contributed to these divergent labor market outcomes. It is important for practitioners and policymakers to consider local economic conditions when applying an economic self-sufficiency standard. Nonetheless, researchers can do their best with the data to provide an estimated minimum level of funding required to achieve adequate outcomes (defined above as earnings of over $35,000 and sufficient earnings premium over ten years to cover program's costs) for specific programs in specific institutions. Overall, however, the complexity of providing higher education, combined with variation obtained by regional labor markets, makes it a daunting, if not impossible task, to derive a single, general figure of cost that could be meaningfully applied to all programs.

The wide variation of institutions and programs in higher education makes estimating the costs of reaching a commonly defined labor market outcome particularly difficult. There are 2,260 different postsecondary programs of study across different types of institutions,[115] 910 community colleges among 4,583 two- and four-year colleges and universities,[116] a variety of delivery modes (classroom, online, lab, field experience), and new innovations, such as competency-based education and co-requisite remediation. Any meaningful estimate of a cost figure will need to, at a minimum, be at the program level. Connecting cost to a defined labor market outcome of $35,000 will be much more politically salient than simply asking for more funds for an ill-defined goal. Policymakers want to know what they are likely to get for their investments.

Employment and earnings metrics that show how graduates of postsecondary education programs perform in the labor market are standard outcomes measurable across different public postsecondary-education institutions, programs of study, credential types, and delivery methods. With the help of more than $700 million in grants from the federal government, states have developed Statewide Longitudinal Data Systems (SLDS), many of which connect students' K–12 and postsecondary educational experiences with their subsequent employment and earnings. These systems provide the necessary information to compare employment and earnings outcomes across the postsecondary education spectrum. By setting a common adequacy of outcomes standard—expressed in labor market metrics—colleges will have an incentive to experiment and innovate in order to use the financial support received as efficiently as possible.

Investments in Specific Practices and Interventions at Community Colleges Have Been Shown to Improve Outcomes

Some postsecondary investments are more promising than others. In terms of improving outcomes, the following investments have substantial potential: more structured programs, smaller class sizes, student success courses, redesigned developmental coursework, more full-time faculty, expanded tutoring and academic support services, and expanded access to guidance through more counselors and coaches.[117] For example, one comprehensive program, the Accelerated Study in Associate Programs (ASAP) at the City University of New York (CUNY), combined many of these promising elements, including a highly structured learning environment, comprehensive advising, enhanced career services, and additional tutoring and financial support. The result was a near doubling in the three-year graduation rate for students in the program, compared to control group of CUNY students who did not participate (40 percent versus 22 percent).[118] Even though the program cost 60 percent more per student, it actually brought down the cost-per-awarded–degree, due to its significant success in increasing the graduation rate.[119]

Another report, by the Center for Community College Student Engagement, found a positive relationship between 13 "high impact" practices and intermediate student outcomes, such as completing at least one developmental course with a grade of C or better; completing at least one gateway course with a grade of C or better; and persisting in the program through enrollment in subsequent academic terms and subsequent academic years.[120] The "high impact" practices considered in the report included student-success courses, accelerated developmental education, proper orientation, tutoring and supplemental instruction, experiential learning beyond the classroom, alerts and interventions, and structured group learning experiences.[121]

Other research highlighting promising investments includes:

+ a review of evidence on the negative effect of lack of structure in community colleges and promising programs that add structure to community college programs;[122]

+ a Tennessee-focused study that found positive impact on persistence from exposure to redesigned developmental math courses;[123]

+ a study finding that the California Acceleration Project had a positive impact by providing accelerated developmental programs in math and English;[124]

+ a randomized trial involving women in college that charted improvements in grades and academic standards as a result of academic support services and financial incentives for good grades;[125]

+ a separate, randomized experiment that found that student coaching has positive impact on persistence and completion;[126]

+ a six-state evaluation of a performance-based scholarship demonstration project, which showed that performance-based scholarships can be an effective investment in improving academic performance of participating low-income students, both during the program and several years after the program ends;[127] and

+ research that suggests that another promising, comprehensive approach to improving student outcomes is program redesign, with the goal of accelerating entry into and completion of programs, guided by research-supported principles such as instructional program coherence, student engagement, contextualized instruction, and the integration of student support services.[128]

While none of these studies directly link investment in inputs to labor-market outcomes providing students with economic self-sufficiency after program completion, they offer a solid starting point for researchers, practitioners, and policymakers seeking to connect adequate outcomes with practices and interventions that could lead to them.

It Costs More to Provide Postsecondary Education That Leads to Adequate Outcomes for Disadvantaged Students, Disproportionately Served by Community Colleges

Community colleges fundamentally serve a different population of students than the one served by four-year public and private universities. Community colleges enroll a disproportionate number of students who are older, working class, black or Latino, or the first generation in their family to go to college; have limited proficiency in English; and who need substantial remediation because of poor preparation in K–12. Students from the bottom two socioeconomic (SES) quartiles account for three out of five students at community colleges.[129] At such institutions, low-SES students outnumber high-SES students two-to-one, and blacks and Latinos account for one-third of all students.[130] Nearly two-thirds of students enter community college academically unprepared for college-level coursework.[131] These populations present a greater challenge for educators, and it takes more resources to help these students attain outcomes that meet a standard of educational adequacy.[132]

Students can face many types of disadvantages. Attempting to capture and adjust for each of these would add substantially to the complexity of determining appropriate funding levels for each community college. In addition, states differ in the way they provide services to disadvantaged groups, with the political environments of different jurisdictions determining which disadvantages are recognized in adjustments of funding levels.

Nevertheless, one specific indicator may be used to adjust funding for many types of disadvantages, without triggering political argument over which specific disadvantages should be recognized by a state. Standardized test scores, while reflecting socioeconomic inequities, also reflect academic preparation for college-level work. Aggregated at the institution level, such scores can serve as a proxy for the degree of disadvantage among a college's students, and can be the primary basis for risk adjustments that account for differences in student populations.

The relationship between college preparation and socioeconomic disadvantages within a community is well established.[133] Many of the socioeconomic disadvantages start in early childhood, and they tend to exhibit a pattern of geographic concentration or residential segregation, affecting some communities more than others.[134]

The K–12 education system tends to perpetuate and exacerbate these disadvantages rather than mitigate them.[135] In most states, students enroll in K–12 schools based

on where they live, and funding for local schools primarily is driven by local property taxes. The geographic segregation by race, ethnicity, and class generally results in students from white wealthy families attending well-funded, high quality schools with other students from white wealthy families; while students from disadvantaged backgrounds attend poor quality, underfunded schools with disproportionate enrollments of disadvantaged students. This dynamic—of distribution and perpetuation of privilege and disadvantage—gives us the ability to consistently and systematically identify communities with higher concentrations of disadvantaged students, and the community colleges that serve them. It lets us sidestep the political and practical complications that arise from getting caught up in specific states' debates over which populations should be considered disadvantaged and which students should be classified as part of those populations.

Remaining Considerations

Our simplified approach in applying an economic self-sufficiency standard to postsecondary education programs does not take into account several key considerations. To establish a sound educational adequacy framework, researchers will need to address the following issues:

1. Our model is based on the on-time student who graduates and finds full-time employment. How should the measurement of adequacy be modified to address the many students who do not complete their programs in the typical time expected, do not complete at all, do not enter the workforce, or do not obtain a full-time, full-year position with benefits? Has the highly educated homemaker who does not work but supports a well-to-do household received an adequate education?

2. The $35,000 floor in our model is a national standard that does not account for regional differences in the cost of living. Practitioners and policymakers will have to apply necessary adjustments based on regional price parities to set an appropriate adequate earnings floor for their state or area. These tools are widely available (see Appendix: Expanding on Additional Considerations for Researchers).

3. The effect of education on labor market outcomes varies substantially with age and experience. Researchers and practitioners need to recognize that different educational paths may lead to different earnings trajectories.

4. Occupational choice and field of study have a tremendous impact on people's earnings. Numerous jobs are socially necessary, but do not offer high pay. How do we assess labor market outcomes for graduates entering intellectual and caring professions (ICP)?

5. Should we be using a risk-adjustment model that factors in different outcomes expectations based on demographic and social variables in order to adjust performance expectations?

6. Should education returns be color- and gender-blind? Does adequacy fail if education does not reduce social inequities in the labor market?

7. How do we measure the labor market outcomes of nontraditional students with previous labor market participation?

8. How do we measure the outcomes for students who attend multiple institutions or major in more than one program?

9. Considering that we need to wait out a ten-year post-graduation period to properly assess the earnings of graduates, how do we deal with the long delay in getting feedback on institutional performance?

10. How do we measure how nonmonetary benefits contribute to the overall value of higher education?

Conclusion

These issues present a number of complex challenges in determining a benchmark for educational adequacy. Higher education is a complex endeavor. Outcomes are affected by many interconnected elements. Oversimplification that

emphasizes the importance of some elements and ignores others will lead to skewed incentives and undermine the holistic nature of higher education. That said, the difficulties we face in grappling with such challenges should not become an excuse for failing to improve the higher education system and hold state and local governments accountable for their higher education policies and expenditures.

In setting out educational adequacy standards, practitioners and policymakers should not strive for perfection, but rather use the best available metrics and methods, with the expectation of continuous refinement and improvement as new information, data, and technologies become available. This approach should be focused on outcomes and afford local administrations the flexibility to determine the most appropriate set of inputs necessary to produce adequate outcomes. Economic self-sufficiency, at the program of study level, must have a central role in this practical approach to setting educational adequacy standards.

Authors

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Appendix: Educational Adequacy in the Twenty-First Century

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Several challenges, detours, and opportunities usually arise during the time period in which a student enrolls, progresses from lower-division to upper division courses, selects and perhaps changes majors, transfers from one postsecondary institution to another, earns a credential, and attains full-time employment (Figure A1). At each of these junctures, individuals can make a different choice. They might want to move to the next stage in this traditional education-to-work pathway, but not be able to make it for a number of personal, financial, or institutional reasons.

The simplified economic self-sufficiency analysis presented in this report is based on the established notions of two years for an associate's degree and four years for a bachelor's degree. In practice, students take different amounts of time to complete a program. The average time-to-completion is three years for an associate's degree and five years for a bachelor's degree, and many students do not complete at all. Someone who completes a certificate program in a year faces different benefits and costs than someone who takes six years to earn an associate's degree. Non-completers also face a very different set of benefits and costs, often ending up saddled with debt from their studies without reaping most of the benefits experienced by program graduates. Thus, if the program's time-to-degree or completion rates fall outside the expected norm, the estimates of cost and benefits will have to be adjusted based on those differences. Additionally, the simplified model in this paper assumes that

FIGURE A1

Students have to progress through multiple junctures before the economic self-sufficiency of their postsecondary education program can be assessed.

This report can be found online at: https://tcf.org/content/report/educational-adequacy-twenty-first-century/.

all students bear the full opportunity cost, through foregone earnings, for the number of years they take to complete their credential. In practice a substantial share of students, especially at community colleges, work while enrolled and thereby do not forego all wages. If that is the case among students in a particular program, practitioners and policymakers will need to make appropriate adjustments in their calculations of annual foregone earnings.

Geographical Variations Based on Cost of Living

We also recognize that geographical differences in the cost of living could lead to different earnings outcomes for workers who graduate and enter full-time employment. Annual earnings of $35,000 will allow workers to buy substantially more in Little Rock, Arkansas, for example, than in New York City. Therefore, policymakers will need to consider appropriate adjustments for regional price parities to determine appropriate earnings standards for different states. For example, this will mean that the national base for an adequacy earnings standard ($35,000) would translate to $30,000 in Mississippi and $41,000 in Washington, D.C. (Figure A2).[1]

Earnings Trajectories

While $35,000 per year is an average for prime-age (25–64) FTFY workers, workers generally do not earn the same throughout a career. Workers generally start out with lower wages, and their compensation tends to increase as they become more experienced and gain more substantive responsibilities. Also, workers with different education levels often have different earnings trajectories. Those with short-term postsecondary occupational credentials, such as certain certificates, tend to earn more than associate's degree holders in the early years of their career, but as their careers progress, associate's degree holders catch up to and overtake certificate holders. In other words, while associate's degree-holders' earnings grow, those of certificate holders' remain flat.[2] Workers' earning outcomes will differ depending on which point in their career is examined and which education program or programs they completed. For the simplified approach we adopt in this paper, we consider workers at age 35—a decade after they complete their education at the traditional age of 25—in examining their ability to reach a wage level above the $35,000 per year threshold.

Based on our simplified model, 33 percent of FTFY workers with an associate's degree and 15 percent of FTFY workers with a bachelor's degree do not meet the test of earning more than $35,000 a year by the time they reach age 35 (see Table A1).

Occupational Choice and Field of Study

The field of study makes a substantial difference in the chances of attaining earnings of more than $35,000 per year by the time a person reaches age 35. For example, among FTFY workers with a bachelor's degree, those who majored in theology and religious vocations; public affairs, policy and social work; and linguistics and foreign languages are more likely to not meet the $35,000 per year earnings standard by the time they reach age 35. Those who majored in transportation sciences and technologies; construction services; engineering; and engineering technologies are most likely to earn more than $35,000 per year by the time they reach age 35 (see Table A2).

A look at occupational selection combined with field of study demonstrates how individual and social choices influence labor market outcomes. For example, some students choose to go into socially beneficial professions, which do not pay wages commensurate with the skill requirements they demand of workers but provide an important social benefit. The intellectual and caring professions (ICPs), such as teachers, social workers, clergy, and early childhood educators, require relatively high education levels but do not garner commensurate wages in the labor market. Among FTFY workers in ICPs, 70 percent of associate's degree holders and 23 percent of bachelor's degree holders do not earn more than $35,000 by age 35 (see Table A3).

These professionals typically do not operate in free-market conditions. They use their higher-level skills to provide a social good, such as teaching, caring for the sick, working

TABLE A1

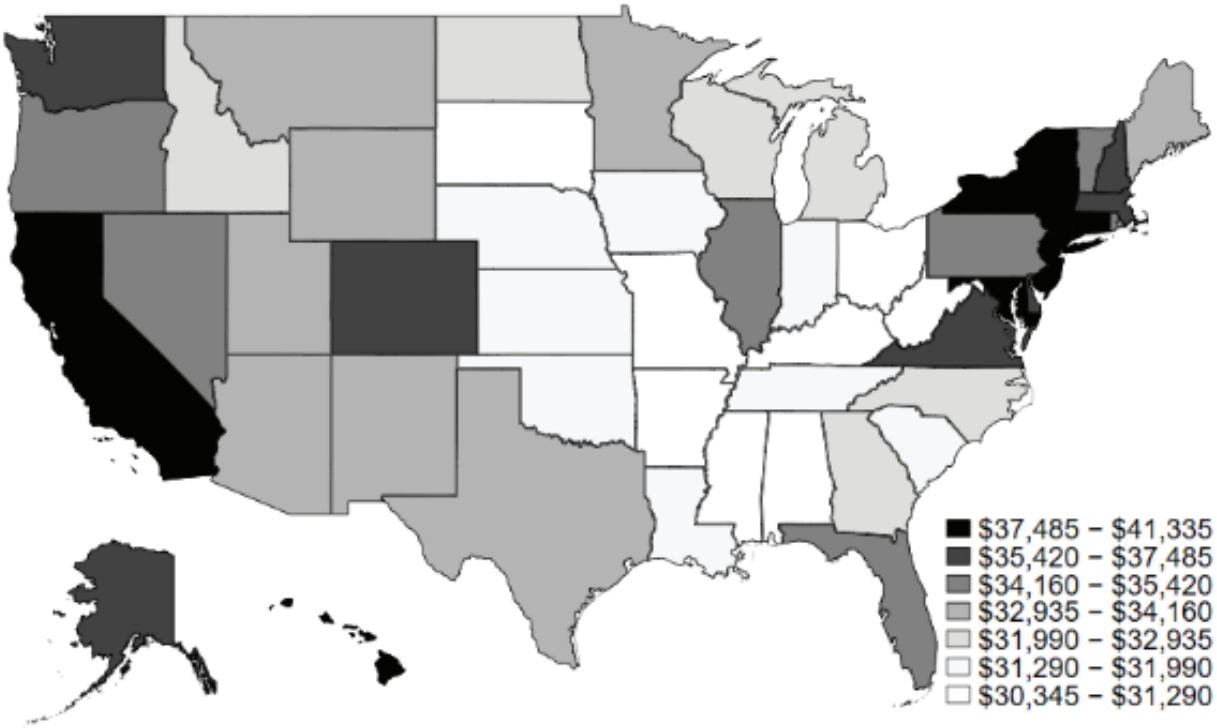
Full-time, full-year workers by whether they attain earnings above $35,000 annually by age 35, by degree type.

35-year old, full-time, full-year (FTFY) workers:		
	Share who earn $35,000 or less per year	**Share who earn more than $35,000 per year**
Assoicate's Degree	33%	67%
Bachelor's Degree	15%	85%

Note: Based on inflation-adjusted earnings to 2015 dollars.
Source: Georgetown University Center on Education and the Workforce analysis of American Community Survey data, 2009–2015 (pooled).

FIGURE A2

College graduates have to earn substantially more in some states than others to have adequate incomes (regional equivalent to $35,000).



Source: Georgetown University Center on Education and the Workforce analysis based on U.S. Bureau of Economic Analysis, "Real Personal Income for States and Metropolitan Areas, 2014," 2016.

TABLE A2

Full-time, full-year workers with a bachelor's degree by whether they attain earnings above $35,000 annually by age 35, by major.

35-year old, full-time, full-year (FTFY) workers:		
	Share earning $35,000 or less per year	**Share earning $35,000 more per year**
Theology and Religious Vocations	31%	69%
Public Affairs, Policy, and Social Work	30%	70%
Linguistics and Foreign Languages	27%	73%
Law	24%	76%
Education Administration and Teaching	24%	76%
Fine Arts	22%	78%
Family and Consumer Sciences	21%	79%
Psychology	21%	79%
English Language, Literature, and Compos	18%	82%
Agriculture	18%	82%
Liberal Arts and Humanities	18%	82%
Interdisciplinary and Multi-Disciplinary	18%	82%
Physical Fitness, Parks, Recreation, and	17%	83%
Cosmetology Services and Culinary Arts	17%	83%
Social Sciences	16%	84%
Communication Technologies	16%	84%
Criminal Justice and Fire Protection	16%	84%
Communications	16%	84%
Area, Ethnic, and Civilization Studies	16%	84%
Philosophy and Religious Studies	16%	84%
Biology and Life Sciences	15%	85%
History	15%	85%
Business	13%	87%
Physical Sciences	12%	88%
Mathematics and Statistics	12%	88%
Environment and Natural Resources	11%	89%
Medical and Health Sciences and Services	11%	89%
Architecture	10%	90%
Computer and Information Sciences	10%	90%
Engineering Technologies	9%	91%
Engineering	7%	93%
Construction Services	5%	95%
Transportation Sciences and Technologies	5%	95%

Note: Based on inflation-adjusted earnings in 2015 dollars. The following majors were excluded because the sample size was too small for meaningful analysis: library science; military technologies; nuclear and industrial radiology, and biological technologies; and precision production and industrial arts.
Source: Georgetown University Center on Education and the Workforce analysis of American Community Survey data, 2009–2015 (pooled).

TABLE A3

Full-time, full-year workers with an associate's degree in intellectual and caring professions by whether they attain earnings above $35,000 annually by age 35, by degree type.

35-year old, full-time, full-year (FTFY) workers in intellectual and caring professions (ICPs):		
	Share who earn $35,000 or less per year	**Share who earn more than $35,000 per year**
Assoicate's Degree	70%	30%
Bachelor's Degree	23%	77%

Note: Based on inflation-adjusted earnings in 2015 dollars. ICPs encompass the following occupations: counselors; social workers; social and human service assistants; miscellaneous community and social service specialists, including health educators and community health workers; clergy; directors, religious activities and education; religious workers, all other; preschool and kindergarten teachers; elementary and middle school teachers; secondary school teachers; and special education teachers.
Source: Georgetown University Center on Education and the Workforce analysis of American Community Survey data, 2009-2015 (pooled).

TABLE A4

Women, blacks, and Latinos are less likely to reach the $35,000 per year earnings threshold by age 35.

35-year old, full-time, full-year (FTFY) workers:		
	Share who earn $35,000 or less per year	**Share who earn more than $35,000 per year**
Men		
Assoicate's Degree	70%	30%
Bachelor's Degree	23%	77%
Women		
Associate's Degree	43%	57%
Bachelor's Degree	20%	80%
Whites		
Associate's Degree	28%	72%
Bachelor's Degree	13%	87%
Blacks/African Americans		
Associate's Degree	44%	56%
Bachelor's Degree	23%	77%
Hispanics/Latinos		
Associate's Degree	39%	61%
Bachelor's Degree	21%	79%

Note: Based on inflation-adjusted earnings in 2015 dollars.
Source: Georgetown University Center on Education and the Workforce analysis of American Community Survey data, 2009-2015 (pooled).

in charities, or other service to vulnerable populations or society as a whole. Thus, they give up the wages they could have earned with the same level of skills in an alternative occupation. The ICP careers are in a certain sense a combination of paid employment and public service. They also reflect political and policy choices that we as a society have made. These choices put a substantial share of the cost of delivering these public services on these professionals, rather than distributing it more broadly across the society and paying these workers' wages commensurate with the value of their contributions. The educational programs that prepare these professionals to be successful in their chosen field may provide an adequate benefit to society even if they do not meet the economic self-sufficiency standard based on wages earned by their graduates. In such cases, a relative economic threshold that compares program graduates to others in their field may be more appropriate.

Social Inequities in the Labor Market

Postsecondary institutions cannot change wider social inequities in the labor market, but they can influence them. Existing inequalities and biases in the labor market based on characteristics such as gender, race, ethnicity, age, or disability have a major impact on workers' earnings. Even if two people, a man and a woman for instance, receive an equivalent education (same institution, same level, same program of study), often they do not face the same prospects in the labor market. Among women FTFY workers with an associate's degree, 43 percent do not earn more than $35,000 per year by age 35, compared to 23 percent for men. Among women FTFY workers with a bachelor's degree, 20 percent do not earn more than $35,000 per year by age 35, compared to 11 percent for men (see Table A4). Similarly, among FTFY workers with an associate's degree, 44 percent of blacks and 39 percent of Latinos do not earn more than $35,000 per year by age 35, compared to 28 percent of whites. Also, among FTFY workers with a bachelor's degree, 23 percent of blacks and 21 percent of Latinos do not earn more than $35,000 per year by age 35, compared to 13 percent of whites.

While society may be willing to accept that people in the intellectual and caring professions receive lower earnings on average, it should not accept that some groups of students receive lower earnings in the labor market based on prejudice or bias. Colleges should be expected to address any bias in their admissions and administration of educational programs, as well as to work with employers, policymakers, and other stakeholders to root out prejudices and inequities in society. However, it is, practically speaking, unrealistic to expect colleges single-handedly to remedy discrimination and prejudice in broader society in general and in the labor market in particular. While no group of students should have the bar set lower for it due to bias, the educational adequacy standard should also avoid giving colleges incentives to cherry-pick students from privileged backgrounds, which would unproductively create more access barriers to quality postsecondary education for disadvantaged groups.[3]

Nontraditional Students

In examining costs and benefits, our economic self-sufficiency analysis focuses on people with a full career ahead of them. They have ten years to recoup the costs of their education, and another thirty years to reap the benefits afforded by wage premiums relative to workers with no more than a high school diploma.[4] Also, the earnings for these workers tend to follow a typical trajectory, where they have a lower earnings level when they first start in the labor market following graduation, and those earnings then grow over time as they gain work experience in their field. These are reasonable assumptions for traditional-age college students who enter their program of study upon graduating high school. However, postsecondary education and training providers, especially community colleges, serve a growing number of older, nontraditional students, who either seek advancement in their careers or are looking to change their careers altogether.[5] Among community colleges, 35 percent of students are now age 25 or older.[6] For these students, the general economic self-sufficiency analysis presented in this paper will need major adjustments or a different approach. Comparison of earnings before enrollment in the program with earnings after graduation is one potential option to

gauge marginal labor market benefits for these students. Since community college programs serve a mix of traditional and nontraditional students, practitioners should consider ways to combine the outcomes for the two groups of students into a weighted adequacy score for each program of study.

Multiple Institutions and Programs of Study

Labor market outcomes also do not differentiate the contributions of individual institutions to students who attended multiple institutions, nor do they asses the contributions of multiple programs to students who switched majors or majored in two or more disciplines. This is a concern for evaluating the economic self-sufficiency of community college programs in particular, as many community college students seek to transfer to a four-year college or university. While the costs of each education program can be clearly distinguished, the benefits of education are cumulative, making it impossible to pinpoint which program is responsible for which share of the benefits.

Delay between Program Delivery and Availability of Labor Market Outcomes

Another practical issue is that it often takes years for college graduates to attain meaningful earnings. Students have to graduate from their program, enter the labor market, and start earning stable, regular wages. Ideally, data on graduates' earnings for ten years or more after they complete their program would provide information for a comprehensive assessment of economic self-sufficiency. However, it takes at least a decade before this information becomes available, making the delay between performance and feedback too long for substantive use in continuous evaluation and performance improvement. By the time meaningful labor market outcomes become available, leadership of the program may change, faculty and staff may change, and the program may not even be around anymore.

Thus, by the time they become available, labor market outcomes reflect past policies, practices, spending, and funding levels, not current ones. For shorter-term assessments of institutional performance and of progress in meeting educational adequacy standards, supplementary intermediate metrics should be considered. These intermediate metrics can provide some indication as to whether students are well positioned to complete their programs with sufficient labor market potential and capacity to obtain additional education. These metrics include measures of factors such as enrollment, progression (persistence and retention), transfer, major selection, and completion, as well as the attainment of additional education and training credentials upon leaving the educational program.

Contribution of Nonmonetary Benefits

In addition, focusing on monetary benefits of higher education obscures the fact that higher education also provides important nonmonetary benefits. While economic self-sufficiency is a necessary component of educational adequacy, it is not by itself sufficient, and should not be the sole focus of postsecondary educators to the detriment of other outcomes. This report focuses on economic self-sufficiency and does not consider nonmonetary benefits in any substantial depth. In order to get a holistic assessment of educational adequacy, the working group will need to account for these additional outcomes and dimensions of postsecondary education.

Notes

1 Georgetown University Center on Education and the Workforce analysis using regional price parities from U.S. Bureau of Economic Analysis, "Real Personal Income for States and Metropolitan Areas, 2014," 2016.
2 Veronica Minaya and Judith Scott-Clayton, "Labor Market Trajectories for Community College Graduates," Community College Research Center, 2017, https://ccrc.tc.columbia.edu/publications/labor-market-trajectories-community-college-graduates.html.
3 As Chou, et al. acknowledge, any potential accountability metric based on students' post-enrollment financial performance may lead to colleges avoiding enrolling students they deem as "high risk," which may limit access and opportunities for disadvantaged students. Tiffany Chou, Adam Looney, and Tara Watson, "A Risk-Sharing Proposal for Student Loans," The Hamilton Project Policy Proposal, 2017. Overall, at community colleges, this is less of an issue because they are open-enrollment institutions, but since the economic self-sufficiency metric is proposed for application at the program level and there are selective programs at community colleges, this consideration is still relevant even within narrower community college context.
4 Alternatively, the working group could consider the mortgage market criterion of a debt burden being acceptable if it doesn't exceed 27 percent of income.
5 Sarah Turner, "Labor Force to Lecture Hall," The Hamilton Project Policy Proposal, 2017.
6 National Center for Education Statistics (NCES), Digest of Education Statistics tables, U.S. Department of Education, 2015–2016, table 303.55.