THE $2 TRILLION QUESTION: HOW TO SPEND ON EDUCATION FOR THE FUTURE

Getting a college degree is no longer the only—or smartest—way to invest in human capital. Those who think more broadly will prosper in the years ahead, writes columnist Greg Ip. Plus, experts weigh in on how to get better returns, from early childhood to on-the-job training.

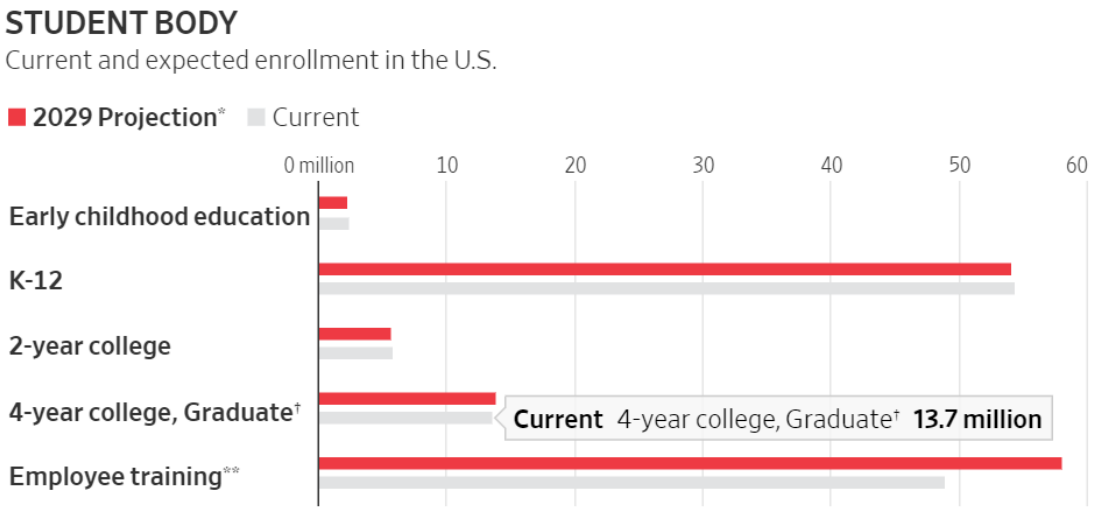
How do you invest in "human capital"? The answer used to be simple: go to college.

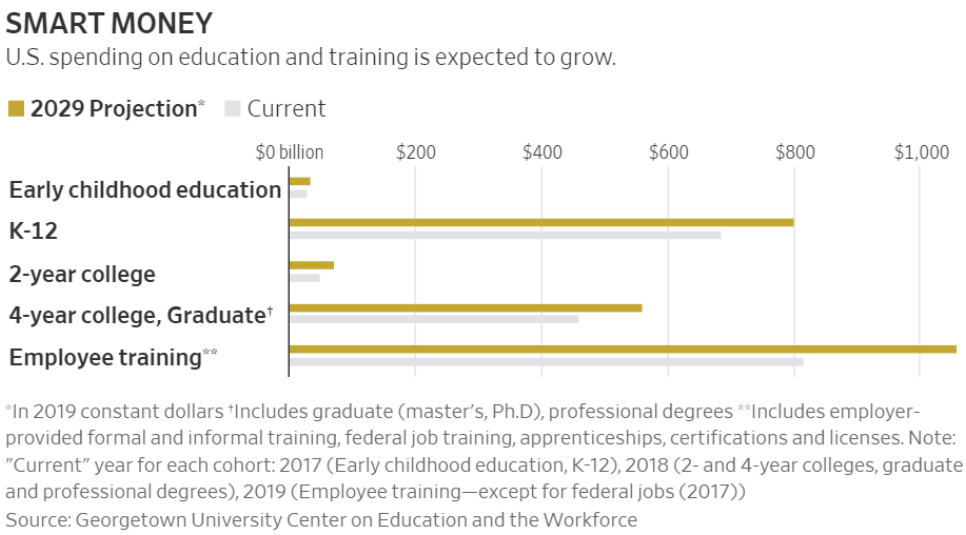
Too simple, it turns out. The assumption that human capital comes from formal education—that if we just send more kids to college, incomes will naturally rise—needs to be revisited. The people, companies and economies that thrive over the coming decade will be the ones that

recognize that building human capital requires a range of investments from preschool to job-specific training.

Just as a business invests in its physical capital, such as machines and facilities, in hopes of earning a higher profit, a worker invests in human capital via time and money sunk into education and training in hopes of earning more per hour. Adam Smith noted as much in The Wealth of Nations: “The improved dexterity of a workman may be considered in the same light as a machine or instrument of trade.”

Is college the best way to acquire that dexterity? Students themselves have come to question that. The share who say higher education is worth the cost has declined since 2016 in annual surveys from the nonprofit Strada Education Network. This year, it plummeted to 56%, from 77%. Not coincidentally, college enrollment dropped sharply this fall.





The pandemic has distorted these trends. But even pre-pandemic, questions were mounting about the contribution of college to well-being. Research increasingly shows it's just one of many complex inputs to human capital that also include upbringing, elementary and secondary school, the sort of company you work for, and luck. The U.S. spends about $2 trillion a year training and educating roughly 125 million people, according to the Georgetown University Center on Education and the Workforce. Policy makers, education institutions and students need to better understand which of those investments are earning reasonable returns.

The average college-degree holder earned 64% more than the average high school graduate in 2018, up from 35% in 1980, according to research by University of Maryland economist Melissa Kearney and two co-authors. But as the college premium has grown, it has also become more variable. Among college graduates in 1979, those at the top earned 4.2 times more than those at the bottom. By 2018, that ratio had grown to 4.8, the research showed. A Manhattan Institute study found that the lowest paid 25% of college grads now earn less than the highest paid 25% of high school grads.

Some of the highest returning investments in human capital are made even before school begins. Nobel laureate economist James Heckmanhas shown that noncognitive traits developed in childhood, such as motivation, the ability to focus on tasks, self-regulation and self-esteem, have lifetime effects—including whether a child will eventually go to college. Mr. Heckman has found that high-quality preschool, by nurturing those traits, can yield social benefits seven times their cost, although that's not necessarily true of all preschool.

The value of college depends crucially on what you study, and what you do with it. For example, holders of an M.B.A. earn far more than holders of master's degrees in psychology and social work. But is that because of the degree—or something else? In a study, Joseph Altonji of Yale University and a co-author compared what such people earned before and after graduate school. They found that M.B.A.s didn't earn notably more than they would have given their undergraduate degree, whereas people with master's degrees in psychology and social work did, suggesting the return on those is higher than the return on an M.B.A. In other words, the salary of the typical M.B.A. holder is due to a lot more than the M.B.A., such as undergraduate training or whatever inclinations drew her to a career in business.

Returns from attending college are also tied to how closely it connects to work. Underemployment—working in a job that doesn't require your degree or certificate—extracts a steep penalty: an average of about $10,000 in lower earnings per year, according to Strada. It found 43% of bachelor's degree recipients were underemployed in their first year of work, and more than half of those were still underemployed after five years. Of 20 majors, those in engineering were least likely to be underemployed in their first job, at 29%, while majors in homeland

security, law enforcement, firefighting and related protective services were most likely, at 65%, according to Strada.

The work connection points to how students and institutions can reap higher returns from time and money spent on college. When Gallup asked about 100,000 U.S. college graduates what part of college contributed most to a satisfying and well-paying career, No. 1 was internships.

The growing recognition of the value of job-specific training has fueled interest in apprenticeships as an alternative to four- or even two-year college. A recent study of apprentices in advanced manufacturing programs linking community colleges and manufacturers in Kentucky found graduates after five years earned $45,000 more than students at the same schools of similar age and academic background who didn't have apprenticeships.

Education and training in all their forms can only explain so much. Innate ability and talent obviously matter: Like other Major League Baseball players, Los Angeles Angels center fielder and eight-time major-league all-star Mike Trout trains intensively, but his training clearly yields far better results, which is reflected in his (record) salary.

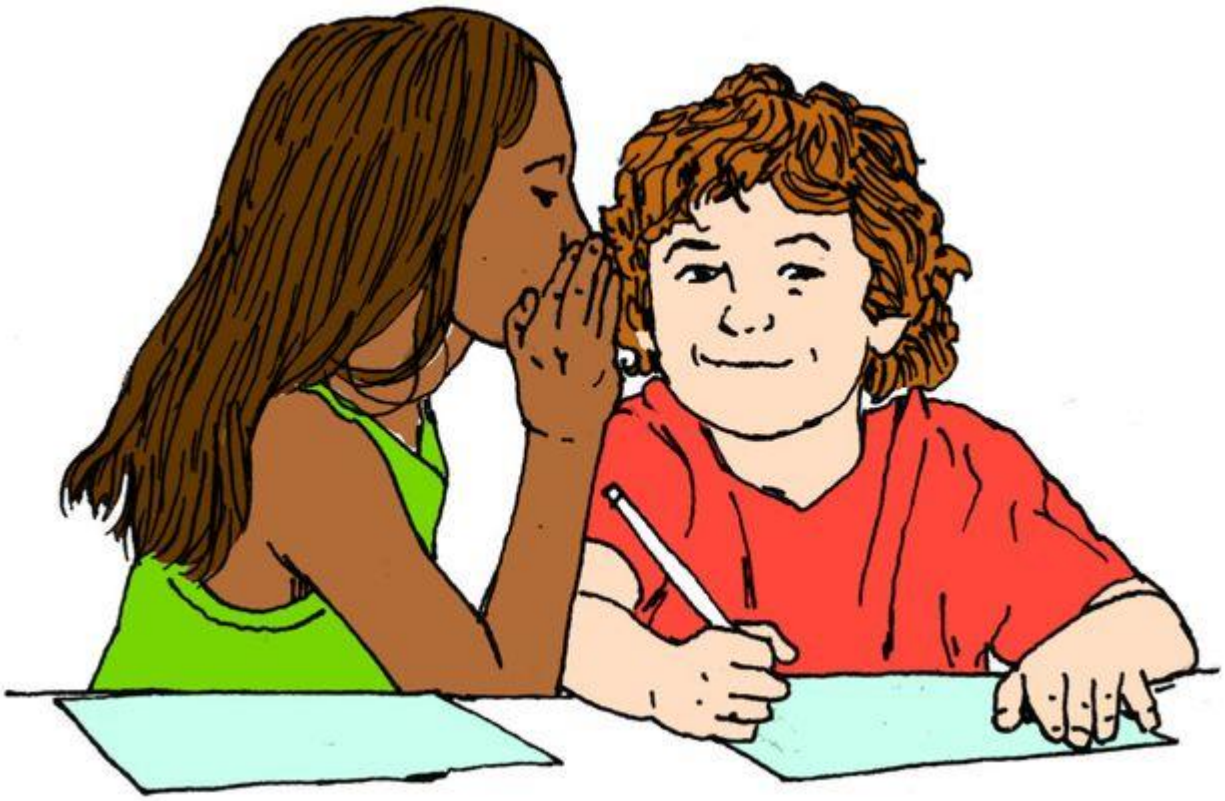
Mr. Trout was just as talented as a minor leaguer, but only in the major leagues could the full potential of his human capital be realized. The same is true for most workers: Getting the highest return on human capital depends a lot on where it's used. One of the least appreciated but most important drivers of inequality is the growing gap between the most and least successful companies. Chief executives earn a lot more than secretaries, but secretaries at superstar companies earn more than secretaries at also-rans—and that's what's driving up inequality, according to a study by Nick Bloom of Stanford University and four co-authors.

Of course, this isn't just luck: The most successful companies tend to hire the best trained, most talented individuals. The connection between corporate success and human capital is only going to grow. The companies that have prospered most before and during the pandemic are those whose value lies not on their balance sheets but intangibles such as brands, intellectual property and digital networks. These are the products of human, not physical, capital. It's another reminder that human capital will determine who prospers and who doesn't in the economy of tomorrow—so long as we think of human capital broadly enough.

More Bang for the School Buck

The U.S. spends $2 trillion a year training and educating and training roughly 125 million people—a number that is set to grow in the coming years, according to the Georgetown University Center on Education and the Workforce. The Wall Street Journal spoke with education experts for their ideas on how to improve the return on investment. Their recommendations? Early-childhood education with a bigger focus on children's health, more tailored instruction at the K-12 level, two- and four-year college curriculum shaped around practical certifications, and lifelong opportunities for worker training.

Early-Childhood Education: A Holistic View



In the next decade, preschool educators will likely work more closely with pediatricians to improve nutrition, build resilience, and reduce sources of toxic stress, such as chronic neglect, among toddlers, says James Radner, an assistant professor at the University of Toronto studying early childhood development.

“The future of early childhood education should address the holistic needs of children and their families by considering their social and economic needs,” says Dr. Joan Lombardi, director of Early Opportunities LLC, a philanthropic advisory focused on the development of young children and families.

Child-development experts may be more likely to screen parents for depression during home visits, for example, says Gabriele Fain, director of

the early-childhood development and education practice area at American Institutes for Research, a nonprofit research organization.

K-12: Goodbye Standardized Learning

The next decade could see a shift in teaching methods at the elementary level, such as grouping students based on learning needs, not grade level, says John F. Pane, a senior scientist studying education at the Rand Corp.

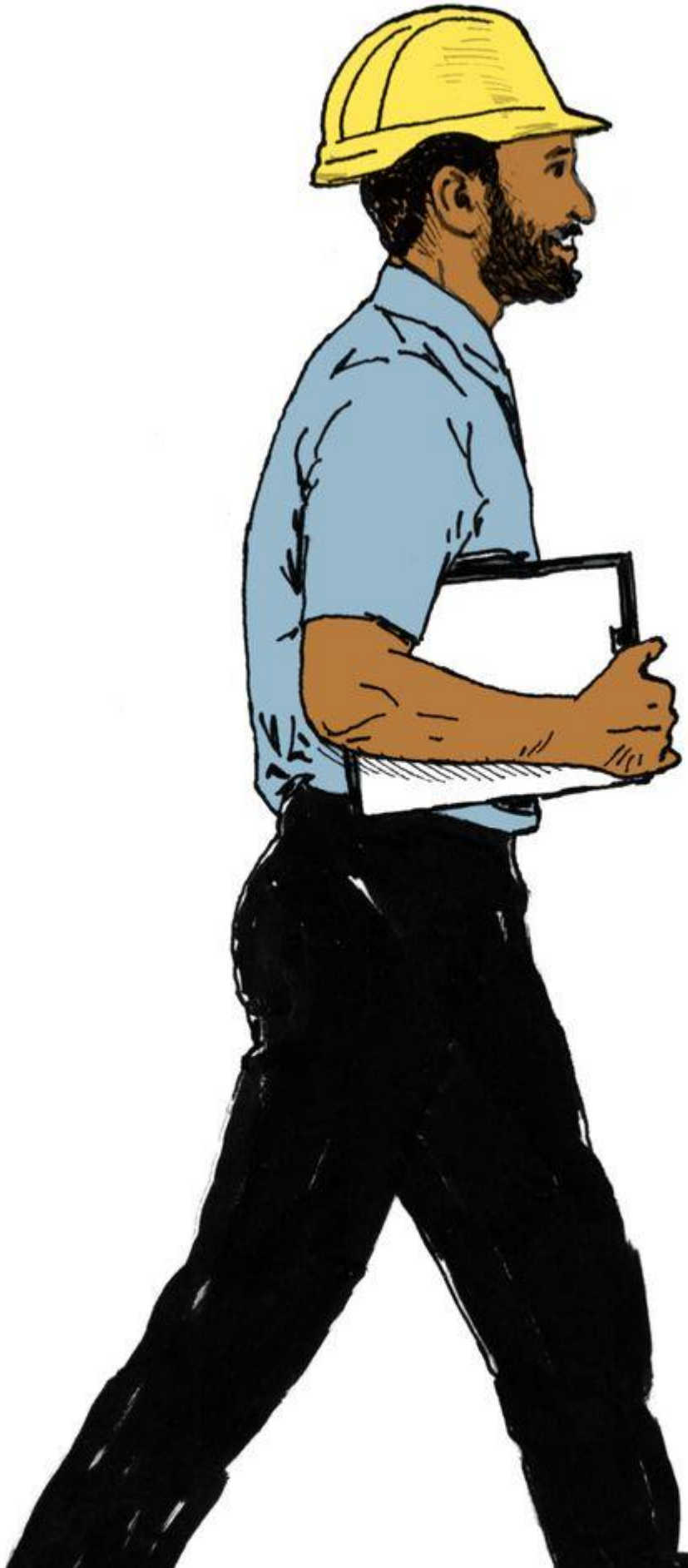
Middle schools may be shaken up, too, as the curriculum stretches beyond the classroom's walls to museums, libraries and local communities—not as a peripheral part of the day but as a means of acquiring knowledge in nontraditional ways, says Katherine Prince, vice president of strategic foresight at KnowledgeWorks, an Ohio-based nonprofit organization. Teachers would use performance-based tasks like projects and class presentations to measure progress, she says.

The coming years may also see more use of digital tutoring portals to assess which skills a student has mastered and which she is ready to take on, allowing educators to fine-tune learning.

$23,835

The average total tuition, fees, room and board rates charged for full-time undergraduate students in degree-granting institutions in 2017 to 2018, a 25% increase from 2007 to 2008, according to the National Center for Education Statistics.

Two-Year Colleges: Skills Over Degrees



Postsecondary institutions will have to adapt to better prepare their students for a marketplace that increasingly emphasizes skills over degrees, says Louis Soares, chief learning and innovation officer at the American Council on Education, an advocacy group for colleges and universities. Lifelong learning will become a bigger part of education, he says.

Community colleges will strive to make their students more competitive by granting more entry-level certifications that can be built on over time, says Jaime S. Fall, director of UpSkill America, an economic-opportunities program at the Aspen Institute. “If someone is graduating from a marketing program from a state university and they’re certified in Google Analytics and Salesforce, they’re going to be far more marketable,” he says.

To boost students’ chances of getting on a recruiter’s radar, community colleges could increasingly join with local employers to build industry certifications into the students’ curriculum, says David Deming, a professor of public policy at Harvard University.

37.5%

The share of students who entered a public two-year college in fall 2011 and completed a degree or certificate within six years, according to a 2017 report by the National Student Clearinghouse Research Center.

Four-Year College and Beyond: Less Campus, More Computer

As the cost of a four-year college degree balloons, higher-education institutions may face an uphill battle to attract students. Education-technology entrepreneurs intent on offering students cheaper alternatives could fill some of the vacuum, says Mr. Deming. Learners may go through online video lectures with the assistance of an online tutor, for instance. This emerging ecosystem will have to prove it can match what colleges have to offer.

Specialized institutions like business schools may have challenging days ahead too. As employers develop new forms of in-house training, students might see less need to invest in an M.B.A. program, says Mitchell Stevens, a professor of education at Stanford University's Graduate School of Education.

63%

The share of American workers who had taken a class or gotten extra training in the past 12 months, according to a 2016 Pew Research Center study.

Employee Training: Once Is Not Enough

With a proliferation of certifications, employers may shift their hiring practices to give priority to stackable credentials, or education modules that students can take at their own pace, rather than traditional college, says Mr. Fall. “You’re going to have to get a lot better about understanding where people really do need a four-year degree and where they don’t,” he says.

Companies will need to engage in massive workforce development to prepare current employees for jobs transformed by technological change, including online courses in data and computer science, says Beth Cobert, chief operating officer of the nonprofit Markle Foundation, who oversees an initiative to connect workers to middle-skill jobs. This means employers will need to be more transparent about the skills they require from prospective workers and those that can be learned through on-the-job training, she says.

To stay competitive, self-employed workers will need to learn new skills constantly, **says Nick Van Dam, an adjunct associate professor at the University of Pennsylvania’s Graduate School of Education**, who studies learning innovations and leadership development. “You will not be successful, it is my belief, in riding out a 50-year career on your bachelor’s [degree] in marketing that you got when you were 22.”

Illustrations by Ruth Gwily

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