Since the introduction of the GI Bill in 1944, college has been part of the American dream, in large part because it is viewed as a ticket to economic security. Currently, about 21 million individuals attend a postsecondary institution, and the vast majority of high school students aspire to earn a bachelor’s degree or higher. While the popular image of college may be dominated by Ivy League schools, flagship state universities, and elite liberal arts colleges, in fact only a minority of students attend such institutions. Many go to less-selective regional four-year colleges and universities and vocational institutions, and nationwide close to 40 percent are enrolled in open-access community colleges. A small but growing number of students are working toward college degrees mostly or entirely online.

Students pursue postsecondary education for a variety of reasons. Some are looking for a broad liberal arts education, while others are more career focused. Still others enroll to take only a class or two to keep up their skills or simply for the joy of learning. U.S. postsecondary institutions serve not only those students with the best academic preparation but also those who were not well served in the nation’s elementary and secondary school system and need a second chance. This range is reflected in the differing degrees of “college readiness” among entering postsecondary students and in the increasing proportion of students who are “nontraditional” in that they are older, from less advantaged families, financially independent of their parents, parents themselves, or working while going to school.

As enrollments in postsecondary education have increased, so have private and public investments in education. Federal, state, and local governments combined contribute about 1 percent of the nation’s gross domestic product ($160.9 billion in 2011) to postsecondary education, largely predicated on the belief that it addresses long-standing economic inequalities and leads to economic growth. Namely, investment in education benefits the individual in many forms, including higher lifetime income, and benefits society by increasing labor force productivity, which in turn generates faster economic growth. Growing evidence backs these claims. For example, individuals with a bachelor’s degree earn 50 percent more during their
lifetime than individuals with no more than a high school diploma, and their unemployment rate is less than half as high.\(^3\) Research also suggests that college graduates have higher job satisfaction and better health outcomes than those without a college degree. Finally, economists such as Enrico Moretti have documented significant benefits to the broader society: workers earn more in cities with higher proportions of college graduates, suggesting that more educated workers generate positive “spillovers” to other workers. In fact, he documents that cities with more highly educated populations are hubs of innovation and experience faster economic growth than those with less educated populations, again generating positive spillovers to all residents.\(^4\) Increased globalization and advances in production technology suggest that postsecondary education will become even more important to the economic security of individuals and society in the future, as suggested by the work of economist David Autor. He has documented that the occupations that have grown over the past two decades require more “non-routinized” skills, many of which are associated with postsecondary education.\(^5\)

Despite these data, critics are starting to ask whether current high levels of investment in postsecondary education are still worth it. Nowhere is this question more starkly voiced than by Peter Theil, cofounder of PayPal, who two years ago began offering young entrepreneurs up to $100,000 not to go to college. His reasoning is that traditional postsecondary institutions do not teach the critical skills that individuals need to succeed in the “real world” of business. Because timing is everything in business, Theil argues that young people with good ideas should not wait an additional two to three years to complete a degree before fully developing a new product.\(^6\) Others agree that postsecondary education may not be worth it, but their reasons primarily concern the relationship between the high price of postsecondary schooling and the future return, especially in the form of employment and income. For example, based on the Consumer Price Index, overall prices increased by an annual average of 2.4 percent between 2001 and 2011, while college tuition and fees grew by an annual average of 6.8 percent—the highest among all major expenditure categories, including energy (6.6 percent) and medical care services (4.3 percent).\(^7\) Many critics argue that much of the increased cost of postsecondary education is unnecessary and the result of institutions becoming “inefficient” in the sense that they could provide a better quality education for the cost or could provide the same quality education at a lower cost if they simply reorganized. Critics contend that, among other factors, this inefficiency arises because most states finance their public institutions according to the number of students they enroll rather than the number who complete their course of study, and because these institutions have been slow to adopt technology that provides or enhances teaching. The result, these critics say, is a bloated, expensive, and inefficient system in which half of all students who start at a postsecondary institution fail to complete a degree or certificate within six years.\(^8\)

Finally, rising student debt is a subject of widespread concern. While increases in grant aid have helped offset the increases in cost, more and more students (and sometimes their parents) are financing college by taking out large student loans. In some cases, the levels of debt are simply too high relative to what students can earn after leaving college, particularly early in their careers. As a result, some analysts suggest, many young people
are delaying marriage or starting a family, still living with their parents, or putting off buying a home.\textsuperscript{9} In the eyes of some critics, these costs outweigh the benefits that a college education provides.

Individuals with a bachelor’s degree earn 50 percent more during their lifetime than individuals with no more than a high school diploma, and their unemployment rate is less than half as high.

And so policy makers at all levels are faced with several challenges regarding postsecondary education policy. For example, efforts to broaden access have been so successful that many students arrive at college unprepared for the work. This lack of preparation results in large expenditures by state and local government—perhaps as much as $3 billion annually—to help these students acquire the skills they need to succeed in school.\textsuperscript{10} The large numbers of students in developmental education also raise questions about its efficacy and about what high schools should do to better prepare students for postsecondary class work.

Financial aid raises another set of challenges. In fiscal year 2011, 9 million students received Pell Grants at a cost to the federal government of $36.5 billion.\textsuperscript{11} While acknowledging that these federal grants have been increasingly important as state support of public institutions has declined, policy makers want greater assurance that the investment is worthwhile. One result has been increased efforts at oversight and regulation, especially of the for-profit sector and public institutions that have the lowest graduation rates. Innovative ways of financing institutions that go beyond enrollment to focus on completion (or “quality”) are also attracting growing interest, as is the development and adoption of new technology that may help curb costs.

The articles in this issue of the \textit{Future of Children} are designed to address these and some of the other most pressing concerns in postsecondary education. Before reviewing their major points and conclusions, however, we emphasize that space constraints made it impossible to cover many important topics. For example, we do not discuss graduate education, compare the U.S. postsecondary system to those of other countries, or focus explicitly on community colleges. We hope that this issue will be viewed as the beginning of a dialogue on addressing the challenges facing postsecondary education rather than as an end in itself.

\textbf{What Have We Learned?}

Although each article in the issue opens with a full summary, in this section we briefly highlight some of the findings we think are the most important.

\textbf{Overview of American Postsecondary Education}

In their overview, Sandy Baum of George Washington University, Charles Kurose, an independent consultant to the College Board, and Michael McPherson, of the Spencer Foundation, trace the evolution and growth of the postsecondary education sector over the past fifty years. The push for expansion and diversity in the 1960s and 1970s, they write, resulted from a belief in the value of education for the nation and the desire
to broaden access to higher education to students from different ethnic, racial, and socioeconomic backgrounds. The growth in community colleges and other “open access” institutions also gave a second chance to those who had not been well served in elementary and secondary school. These expansions were made possible by increased public sector support from states and the federal government. The efforts to improve access were highly effective: the share of high school graduates attending college rose from 45 percent in 1960 to 70 percent in 2009. The college population also became more diverse, with increasing numbers of female, low-income, older, and minority students. The number of students enrolled part-time also rose. This shift away from the so-called traditional student has meant that institutions have had to accommodate a wider range of student preparation for college-level work, provide other kinds of supports (such as child care and financial aid), and offer more heterogeneous courses.

Tuition has risen very rapidly in recent years. The authors highlight this problem, but point out that the highest prices receive disproportionate attention and that growth in grant aid has caused the net prices most students actually pay to rise more slowly than the sticker prices. At the same time, the share of funding that the states provide to public postsecondary institutions, once a large proportion of their support, has been in decline over the past three decades (dropping from 44 percent in 1980 to 22 percent in 2009). As a result, net funding per student has declined, placing further upward pressure on tuition despite an increasing federal role. The authors explain the different components underlying the cost of providing a postsecondary education and the efforts that are under way to curb costs, including increased reliance on technology to help with instruction. They caution that while policy makers and education leaders should continue to seek ways to increase productivity in higher education, it may not be easy to achieve dramatic cost reduction without compromising quality.

Is College Worth It?
Against a backdrop of skepticism regarding the value of a postsecondary education, Philip Oreopoulos and Uros Petronijevic, both of the University of Toronto, present data on the various costs and benefits of attending college. Specifically, the authors think of college as an investment in which an individual makes financial sacrifices (including tuition payments and forgone earnings) in the near term in exchange for benefits (or returns) in the future. In this framework, students will choose to attend college if the costs—including the “opportunity cost,” or the earnings and other activities that may be forgone in order to attend school—are smaller than the expected benefits, such as higher lifetime earnings, greater likelihood of employment, and improved health. Many factors, however, can make this seemingly straightforward decision more difficult. For example, at the time they must make the decision, students cannot know with certainty about job prospects once they finish. Some students may learn after enrolling that they would prefer not to continue in schooling. Further, the formal economic model assumes that all potential students can borrow against their future incomes and that they do not mind acquiring large amounts of debt to do so. Some individuals may be “credit constrained” in that they cannot borrow for college at competitive rates (sometimes because they have reached their credit limits). And some students are averse to taking on too much debt and would prefer to forgo schooling so that they can work and
avoid having to repay loans at a later date. Finally, the authors emphasize how the simple model overlooks just how difficult it can be for prospective students to navigate the U.S. financial aid system, which can deter them from applying for aid and, as a result, college. For any of these reasons, students may underinvest in their education by deciding either not to enroll in the first place or to leave before completing their schooling.

With this model in mind, the authors then present data detailing that the average college graduate earns $1.2 million net of tuition over a lifetime (in net present value terms) compared with $780,000 for a high school graduate, as well as other expected economic benefits. They also highlight the nonpecuniary benefits of college, such as more independence and opportunities for creativity and more social interaction; evidence also suggests that college graduates enjoy better health than nongraduates. Although some researchers and policy makers worry that the relationships between education and better outcomes are not causal, the authors document several studies, conducted over time, that use credible strategies to identify the causal relationship between education and income and consistently find evidence that more education leads to higher earnings. While these economic benefits of postsecondary education are, on average, substantial, the authors document how these expected returns vary across occupations and may differ across institutions as well, raising yet other dimensions for students to consider when making their schooling decisions.

Finally, Oreopoulos and Petronijevic caution that postsecondary education, like many other investments, does not guarantee a positive return. They note that the “right” answer to whether to attend college will differ for students depending on a variety of factors. They conclude, however, that on average the financial benefits of a postsecondary education outweigh the financial costs, especially for those students who make informed decisions.

Financial Aid Policy: Lessons from Research
As several authors note, making good decisions about how much to spend on a college education, where to enroll, and how to finance that education is a complex endeavor. Further, all agree it is critical that prospective students have the best information available with which to make informed decisions. And yet, as explained by Susan Dynarski, of the University of Michigan, and Judith Scott-Clayton, of Columbia University, the array of financial aid available to students is so complex that it can interfere with the effectiveness of the student aid. Federal involvement in postsecondary education that began with Title IV of the Higher Education Act of 1965 established a small program to help colleges to identify and recruit students with “exceptional financial need.” Since then, Title IV aid has expanded and is now available to assist older students, those attending part-time, and middle-income families through Pell Grants, Stafford Loans, and Federal Work-Study. In addition, the expansion of tax credits, such as the American Opportunity Tax Credit, has made federal aid available for even high-income families. All told, various forms of aid combined amount to about $13,000 per (full-time equivalent) student.

While federal and state governments have increased efforts to help make college affordable for more students, one area where education policy seems to complicate the application process is the Free Application
for Federal Student Aid (FAFSA). Completion of the FAFSA, which is required for students to be eligible for any federal (and most other) financial aid, is daunting and by itself may keep some students from attending college. Further, the complexity of predicting one’s own aid eligibility from federal, state, and institutional sources makes it difficult for students to know what they can afford or how much in loans they might need to attend any particular institution. Thus, making the aid application and eligibility determination process simpler and more transparent to individuals may increase the number who enroll in college as well as help some make better decisions about where to attend and how much debt to take on. Dynarski and Scott-Clayton note some evidence that awarding grant aid with payments tied to academic achievement appears to improve college outcomes relative to aid awarded without such incentives. Even less may be known about how student loans affect student outcomes, although loans make up a large share of overall student aid.

Finally, the authors discuss some of the potential unintended consequences of financial aid policy on individual and institutional behavior. As one example, former U.S. Secretary of Education William Bennett popularized a concern that by lowering the effective price of college for some students, financial aid might induce institutions to increase tuition costs overall. Dynarski and Scott-Clayton cite evidence suggesting that while some selective nonprofit institutions may reduce institutional aid and some for-profit institutions may increase tuition in response to increases in financial aid, these responses have not been observed at public institutions where most Pell Grant recipients attend college.

Student Academic Supports
While financial cost can be a hindrance to successful college completion, inadequate preparation is another major challenge, especially at less-selective and open-enrollment institutions. According to data from the National Center for Education Statistics, only about one-quarter of seniors complete academically rigorous high school coursework that would prepare them for college. Traditionally, this lack of preparation has meant that large numbers of students begin their college career enrolled in developmental courses. Eric P. Bettinger, of Stanford University, and Angela Boatman and Bridget Terry Long, both of Harvard University, discuss what is known about the effectiveness of developmental education as well as other academic programs to help struggling students complete their studies.

The authors emphasize that one of the challenges in studying the effectiveness of developmental education is that simple comparisons of outcomes will generally result in an overly negative estimate of its effectiveness because students placed in developmental education courses are, by definition, less prepared academically than those not placed in such courses and therefore may have worse outcomes for reasons unrelated to the effectiveness of their (developmental) coursework. At the same time, a study in which some eligible students are randomly placed into developmental education classes and other eligible students are randomly assigned to regular classes would be difficult to implement. The authors make use of studies that exploit the fact that institutions typically have a predefined cutoff on placement tests that determines whether a student is required to take developmental classes (an evaluation strategy known as “regression discontinuity”). This
technique assumes students who just pass out of such requirements are, on average, similar to those who just miss passing, with any differences between the two groups being due to random influences that occur with any testing situation (such as a student not feeling well or being distracted on the day of the test). By comparing the outcomes of those just above and just below the test score cutoff, one can generate a statistically unbiased (valid) estimate of the impact of the program.

In their review, the authors report that the benefits of developmental courses differ widely by state, institution, student background, and academic preparedness, making it difficult to judge whether such courses are beneficial on average. These mixed results have led researchers and policy makers to try to better understand which students benefit and which types of programs are the most effective. To date, the research suggests that developmental education programs that accelerate the pace of instruction and those that combine basic skills acquisition with college-level coursework may be the most promising and merit further study. The authors also argue that the instruments and procedures used to place students into developmental education could be improved.

Finally, the diversity of students on campus and the competing responsibilities of family, schoolwork, and employment mean that the success of some students may depend on the ability of institutions to offer support services beyond the traditional academic supports. Some institutions are thus offering peer and faculty mentoring, tutoring, time management workshops, enhanced student advising, and child-care support or services. Unfortunately, the research on the effectiveness of these supports is mixed, highlighting the importance of continued efforts to strengthen existing services and to develop and test new approaches to learn what works best for which students.

High School to College Transitions
It seems obvious that preparation for college should take place mainly in high school, and not after students arrive at a college campus. However, as Andrea Venezia and Laura Jaeger, both of WestEd, note, many students arrive on college campuses unprepared to tackle college-level work, leading to increased discussion of what it means to be “college ready.” The authors describe recent efforts to define what it means to be “college ready” and to improve the transition from high school to college.

While traditional measures of readiness, such as the SAT and ACT, focus on reading, writing, and math skills, the authors note that researchers are increasingly emphasizing the importance of noncognitive skills such as resilience and persistence. The authors point to many factors that underlie the large numbers of students unprepared for postsecondary work, including large disparities between the instruction and services offered by high schools with high concentrations of students in poverty and high schools with more economically advantaged students. They also note the importance of nonacademic variables, such as peer influences and expectations and conditions that encourage academics. Finally, they describe research suggesting that students who “undermatch”—that is, who attend colleges and universities that are less selective than those they are qualified to attend, based on their high school grades and other criteria—perform worse than comparable students who enroll at more selective institutions. The research underscores the need to help
all students find the right institutional “fit” in terms of cost, geographic location, and academic rigor.

Interventions to improve college readiness offer a variety of services from academic preparation and information about college and financial aid, to psychosocial and behavioral supports, to the development of noncognitive skills including organization, anticipation, persistence, and resiliency. The authors highlight federal programs, such as Upward Bound, Talent Search, and Gaining Early Awareness and Readiness for Undergraduate Programs (GEAR UP), which are some of the larger and better-known programs, while also noting that many more students qualify for these programs than can be served with available funding. The authors also discuss more systemic programs, such as Middle College High Schools (MCHS) and Early College High Schools (ECHS), and review efforts to allow high school students to take college classes (known as dual enrollment) and to better align the assessment tools and curricula used by high schools and postsecondary institutions.

The evidence base on the effectiveness of these efforts is limited, but the authors report that the evaluations of precollege support programs, such as those that form the federal TRIO programs (including Upward Bound and Talent Search), generally show small impacts. This finding should not be surprising, given that the programs do not fundamentally change the high school experience of the students. The more systemic programs like MCHS and ECHS show mixed results. Dual-enrollment programs show promise, but the evaluation designs do not use a randomized control group and may overstate the results. The authors argue that current national efforts to define and implement curriculum standards and expectations that carry from kindergarten through high school and align with college are critical if the nation is to make progress in better preparing students for postsecondary education.

For-Profit Colleges

For-profit colleges are the fastest-growing segment of postsecondary education providers. As noted by authors David Deming, Claudia Goldin, and Lawrence Katz, all of Harvard University, this sector accounted for about 4 percent of enrollment in Title IV-eligible institutions in 2000 and grew to nearly 11 percent by 2009. For-profit institutions are responsible for nearly one-third of the growth in postsecondary school enrollment and degrees over the past decade.

Although policy makers and educators in the public and private nonprofit sectors sometimes view for-profit institutions with suspicion, they should not be dismissed out
of hand. Notably, these institutions enroll a disproportionate share of low-income students, minority students, and those who are ill prepared for college. Further, they can be quick to adapt their curricula and programming to meet local labor market needs, making them valuable resources for workers seeking to train for jobs in growing sectors. As a result of this “nimbleness,” for-profit institutions may spur innovation and efficiency in higher education. The authors also note that while public community colleges may provide equal or better education at lower cost, state and local budget pressures may limit the ability of public institutions to serve all who would like to enroll, suggesting that demand for for-profit institutions will continue to grow.

Despite the rapid growth of for-profit institutions, relatively little is known about whether students benefit from having attended them. Although this literature is nascent, as the authors emphasize, it suggests that for-profits are relatively successful with well-defined, short-duration programs but do not do well in terms of completion rates, student loan default rates, and labor market outcomes for seekers of associate’s and higher degrees compared with community colleges and nonselective four-year colleges. These trends are disturbing, especially considering that for-profit institutions rely heavily on federal student aid for their revenue. According to one study, the total cost of attending a for-profit institution (taxpayer subsidies plus tuition and fees) is about $15,000 more than attending a community college even though community colleges are more heavily subsidized by taxpayers than for-profit institutions. To be economically worthwhile, therefore, for-profit institutions need to generate economic returns that are substantially greater than those required of community colleges. To date, the existing research suggests that the costs to students (and society) of attending a for-profit institution likely outweigh the benefits.

Because of the mixed outcomes paired with the high total cost of attendance at for-profits, the authors argue that strong oversight is warranted regarding whether students are sufficiently likely to complete their course of study and subsequently earn enough to justify the investment and pay back their loans. In addition, it is critical that potential students have complete and objective information about the costs and expected benefits available to them when they are making enrollment decisions. More generally, the challenge for public policy is to design incentives for these institutions to improve quality while also maintaining adequate access for those students not well served by other sectors of higher education.

E-learning in Postsecondary Education
Advances in technology have transformed American life in so many ways that it is only natural to ask how online instruction and other innovations might improve access, lower costs, and (possibly) increase quality in postsecondary education. As discussed by Bradford Bell and Jessica Federman, both of Cornell University, while most students continue to attend “traditional” classes, more than 31 percent of U.S. college students took at least one online course during the fall 2010 term. More generally while online courses are one aspect of “e-learning,” technology can be incorporated into the classroom in so many ways that just what constitutes e-learning is ill-defined. As an example, researchers and educators employ about fifty distinct terms encompassing the concept, such as online learning, distance learning, computer-assisted instruction,
computer-based instruction, and computer-based simulation—often inconsistently—making what has been learned in the field difficult to summarize. Bell and Federman employ the general term e-learning to encapsulate the very general “instruction delivered through computer technology.”

Bell and Federman examine three key questions regarding e-learning. The first is whether it is as effective as other delivery methods, such as traditional instructor-led classroom instruction. The challenge here is one of comparing an e-learning classroom to a traditional classroom experience in a way in which the only pedagogical difference is the mode of delivery and in which the characteristics of the students are the same, on average. In other words, it is difficult to construct a causal estimate of the impact of e-learning on student outcomes that is untainted by other factors. To make sense of the literature, the authors rely on several meta-analyses that attempt to summarize the literature by aggregating findings from multiple studies. While the methodology is only as good as the quality of the underlying studies—which is not always easy to discern—Bell and Federman argue that such studies provide the most comprehensive assessment of the impact of e-learning. They conclude that e-learning produces outcomes equivalent to other ways of teaching when instructional conditions are held constant.

Having established that e-learning can be as effective as traditional classroom instruction, the authors next document how some of the features of e-learning—such as the content of the material, the sense of realism that e-learning creates, the characteristics that determine the degree of and type of interaction between students, and the richness, or “bandwidth,” that determines the students’ ability to communicate with other students and the instructor in the class—can all influence the effectiveness of e-learning programs. Importantly, these are the features that can be configured differently for different types of learners to most effectively reach them. Finally, the authors address barriers to the adoption of e-learning in postsecondary education, such as concerns about fraud and cheating, uncertainties about the cost of e-learning, and the unique challenges faced by low-income and disadvantaged students, all of which have the potential to undermine the adoption of e-learning instruction.

Overall, the authors conclude that e-learning can be an effective means of delivering postsecondary education. They also urge researchers to examine how different aspects of these programs influence their effectiveness and to address the numerous barriers to the adoption of e-learning in higher education.

Improving Productivity in Broad-Access Public Postsecondary Education

With increasing tuition paired with stagnant growth in median income, many policy makers and parents are calling for institutions of higher education to improve productivity. Namely, they challenge institutions to find ways to cut costs—which should translate into lower tuition—without sacrificing access, quality, or completion rates. Davis Jenkins and Olga Rodríguez, both of Columbia University, examine research on how “broad-access” institutions—community colleges and less-selective public four-year colleges and universities—might be able to do so. Unfortunately, as the authors review the research on the ways institutions can improve productivity, it becomes clear that doing so will not be easy. For example, although one can easily measure the number
of degrees completed, it is much less clear how to measure whether the quality of degrees produced has changed. Further, colleges do not systematically and routinely collect data on all inputs involved in producing degrees and certificates, such as faculty time use and student effort.

Research indicates that the strategies broad-access institutions have relied on to cut costs in the past—such as using part-time instructors and increasing student-faculty ratios—may in fact reduce productivity and efficiency. Moreover, the limited evidence suggests that some of the most popular strategies for improving student success, such as Upward Bound and enhanced student services, are not cost-effective. New strategies to cut costs and improve college success are therefore imperative. Some believe that redesigning courses to make use of computer-assisted instruction and other automated tools will lead to better outcomes at lower cost, although the evidence on the ability of these technologies to improve efficiency is mixed. Studies on organizational effectiveness in and outside of higher education indicate that, to improve performance substantially, colleges must go beyond redesigning courses to change the way they organize and manage programs and supports along the student’s “pathway” through college. A growing number of institutions are exploring this approach, but whether it will lead to better student outcomes or reduce the cost per completion is not yet known.

State and federal policy makers have also tried motivating colleges to improve student learning and completion by basing funding not only on how many students they enroll but at least in part on how many they graduate, transfer, or place in jobs. To date these policies have not been associated with changes in college practice, but that may be because such a small portion of funding hinges on performance. As a result, some states are beginning to increase the proportion of funding tied to student outcomes.

As policy makers push colleges to lower the cost per graduate, they must take care to avoid providing incentives for schools to restrict access (and skim off the top students) or to lower standards and reduce the quality of the education provided. As yet, there are no commonly accepted methods for measuring quality of outcomes in higher education, even within particular sectors. Although these measures are imperfect, Jenkins and Rodríguez argue that policy makers and institutions should capitalize on advances in research that measure the economic value of postsecondary education as an indicator of quality. At the same time, colleges and universities must redouble efforts to define learning outcomes and measure student mastery. It is only by improving measurement that institutions will be able to achieve the twin goals of lowering costs without affecting quality and access.

Where to Go from Here
The articles in this issue suggest that postsecondary education is at a crossroads. On one hand is the remarkable expansion in college access and the implementation of numerous policies and programs designed to help students succeed. On the other hand are the realization that far too many students who enter the nation’s colleges and universities fail to earn credentials, and the fear that costs are spiraling out of control. Is it possible to preserve access, improve student outcomes, and keep college affordable?

While there are no easy fixes, this issue of the *Future of Children* suggests several areas...
where policy makers and practitioners can make progress. Perhaps the place to start is to reach consensus on what it means for students to be college ready. Efforts under way in some states to align primary and secondary education systems with postsecondary education systems and develop common standards for high school graduation and college entry are steps in the right direction, but they need to be accompanied by meaningful changes in teaching and assessment. High schools need to place greater emphasis on developing both the critical thinking skills and the noncognitive skills needed to succeed in college and in a career. Likewise, community colleges and other less-selective institutions need to reexamine policies and practices that consign large numbers of students to developmental education courses. To make the courses more effective, some states and institutions try to integrate basic English and math instruction into occupational training programs or to accelerate the pace of developmental education by introducing new curricula and pedagogy, including computer-aided instruction. There is no shortage of good ideas for reforming developmental education, but more evaluation is needed to guide policy makers and practitioners on which approaches are most effective and cost-efficient.

Another theme that arises across several articles is the need for objective and transparent information to help students in deciding whether to go to college, where to enroll, and what program to pursue. Lack of objective information on completion and employment outcomes, for instance, hinders students’ ability to choose among various institutions and programs. Similarly, the daunting financial aid application process and the lack of transparency on how financial aid really works makes it difficult for all but those students from the wealthiest families to know how much they will have to pay out-of-pocket to attend a particular institution. Student-loan financing, and the variety of options available for students and parents to consider, is also complex. As a result, many are discouraged from applying and others fail to consider more selective institutions for which they are qualified but believe they cannot afford to attend. Simplification of the financial aid application process may help students and families make better use of existing aid programs and improve their overall impact on postsecondary access and completion.

Several articles also discuss the need to think further about the role that technology might play in supporting students and reducing, or at least holding the line on, college costs. Many colleges and universities are already using automated programs to augment traditional counseling and advising programs staffed by faculty members or student services workers. Automated online course registration programs can take into account factors such as a student’s past academic performance and degree goal to recommend courses that will help the student to feel appropriately challenged and to earn a degree in the shortest amount of time—much like online retailers make recommendations of books and movies buyers might like based on previous purchases. Computers can also be programmed to provide “early warnings” to students and their advisers when students receive poor midterm grades or show other signs of academic trouble. Unfortunately, less is known about the effectiveness of these new systems in promoting student achievement. More generally, efforts to create Massive Open Online Courses (MOOCs) hold great promise for extending college opportunities to many more students at lower cost than traditional classroom instruction. Although
many educators rightly worry about the quality of such courses and the loss of face-to-face interaction, MOOC proponents counter that the courses are often taught by the nation’s best professors and that the formation of vibrant communities via the Internet can provide educational experiences that are just as stimulating as conventional classroom instruction—or maybe even more so, given the potential of MOOCs to engage students from across the globe in online discussion forums. Educators are only beginning to understand how online communities function and how they might be harnessed to support college access and completion. Given the high initial costs of developing effective e-learning opportunities combined with the potentially lower cost of employing such strategies, the public sector can play a critical role in encouraging the development of the technologies and rigorously studying their effectiveness. It seems clear that e-learning is here to stay; the question is how to ensure the instruction meets high standards and if and how it should be integrated with more traditional, campus-based learning.

Finally, the economic downturn has returned attention to the economic benefits and costs of a postsecondary education. Policy makers, parents, and students are rightfully asking if college is worth it and are demanding more accountability from postsecondary institutions. And yet the intense focus on relatively short-term measurable benefits and costs may run the risk of ignoring the less-tangible benefits of a postsecondary education. These benefits include higher-order problem solving, critical thinking, and creativity, as well as experience working with others who are different, which makes for a better functioning workplace and society. Some of these less-tangible benefits can have a payoff in the short term, while others may take more time to develop. In both cases, these benefits can have long-lasting and important positive impacts on individuals and society. A vibrant postsecondary sector is critical to the future of the United States; the delicate challenge for policy makers is to build on its current strengths while balancing many competing objectives.
Endnotes


7. Authors’ calculations based on the Bureau of Labor Statistics, All Urban Consumers (CPI-U) U.S. city average, seasonally adjusted index by expenditure category for the following categories: all items, food, energy, apparel, medical care commodities, shelter, medical care services, college tuition and fees, transportation services, and miscellaneous personal services, available from Haver Analytics, New York.


