EVENTS

Degrees of Difficulty: Can American Higher Education Regain Its Edge?

Date: Tuesday, February 15, 2011
Time: 9:00 AM — 5:00 PM
Location: 1150 Seventeenth Street, N.W., Washington, D.C. 20036

About This Event

Over the past two years, policymakers and advocates have laid out ambitious goals for American higher education. Ranging from President Obama's desire for the United States to be once again the most educated country in the world, to the Gates Foundation's effort to double the number of low-income individuals with a postsecondary degree, this bold agenda for boosting college completion rates has garnered considerable attention. Yet these goals raise serious questions about the policy changes necessary to accomplish them and the obstacles that may stand in the way. To identify the challenges and opportunities that surround the push to make American higher education more productive, AEI commissioned new research from eleven of the country's leading thinkers on postsecondary policy. At this event, led by AEI's Andrew P. Kelly and Mark Schneider, presenters and discussants will explore what we know about raising degree completion rates, the policy issues that currently hinder progress, and what can be learned from state-level reform strategies.
Agenda
8:30 a.m.
Registration and Breakfast

9:00
Introduction:
MARK SCHNEIDER, American Institutes for Research and AEI

9:10
Panel I: Where Do We Stand and How Can We Improve?

Presenters:
MATTHEW CHINGOS, Brookings Institution
ARTHUR HAUPTMAN, Public Policy Consultant

Discussants:
DEWAYNE MATTHEWS, Lumina Foundation
TRAVIS REINDL, National Governors Association

Moderator:
ANDREW P. KELLY, AEI

10:50
Panel II: The Performance and Potential of Sub-baccalaureate Programs

Presenters:
THOMAS BAILEY, Columbia University
BRIAN BOSWORTH, Future Works
Diane Auer Jones, Career Education Corporation

Discussant:
SARA GOLDRICK-RAB, University of Wisconsin

Moderator:
MARK SCHNEIDER, American Institutes for Research and AEI

12:30 p.m.
Luncheon

1:15
Panel III: Identifying Policy Problems and Solutions

Presenters:
ERIC BETTINGER, Stanford University
ANGELA BOATMAN, Harvard Graduate School of Education
JOSIPA ROKSA, University of Virginia
Discussant:
SUSAN DYNARSKI, University of Michigan

Moderator:
MARK SCHNEIDER, American Institutes for Research and AEI

3:05
Remarks:
EDUARDO OCHOA, US Department of Education

3:35
Panel IV: Reform Lessons from the States

Presenters:
ELAINE BAKER, Community College of Denver
GERI MALANDRA, Kaplan University
RICHARD PETRICK, Ohio Board of Regents (retired)

Discussant:
GEORGE PERNSTEINER, Oregon University System

Moderator:
ANDREW P. KELLY, AEI

5:00
Adjournment and Reception

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Summary

WASHINGTON, FEBRUARY 17, 2011--Without transformative reforms and a broader definition of what constitutes postsecondary education, the nation's colleges and universities will fall short of the Obama administration's higher education goals, according to a panel of experts at the American Enterprise Institute. To determine if the president's "completion agenda" is feasible, researchers laid out what we know and do not know about how to increase the number of adults with a college degree. As Matthew Chingos of the Brookings Institution noted, we need more rigorous studies to pinpoint the practices and policies that colleges and universities can use to help students complete a degree. Panelists cited the sub-baccalaureate sector, especially certificate and apprenticeship programs, as some of the lowest-hanging fruit for raising completion rates--as these programs offer the flexibility and practical skills that many adults demand and that are unavailable at traditional four-year colleges.

Many institutions and states have attempted to tackle the challenge of raising degree completion rates with remedies such as increased financial aid and remediation courses. However, as Stanford University researcher Eric Bettinger noted, even large increases in our current financial aid programs are unlikely to effect the degree of change necessary to meet the goals laid out by Obama and others. State leaders in postsecondary education echoed these concerns about traditional policy remedies, describing how valiant reform efforts are driven by an outcomes-focused culture rather than any single policy intervention because policies often prove difficult to scale across campuses. Eduardo Ochoa, US assistant secretary of postsecondary education, acknowledged these difficulties and described the administration's plan to encourage innovation and increase productivity across the nation's colleges and universities. The conference underscored the need to transform the definition of postsecondary education, as well as the significant challenges facing institutions, states, and federal policymakers in achieving these ambitious goals.
Speaker biographies

**Thomas Bailey** is the George and Abby O'Neill Professor of Economics and Education at Teachers College, Columbia University. He is also director of the Community College Research Center and the National Center for Postsecondary Research, both housed at Teachers College. An economist specializing in education, labor economics, and econometrics, Mr. Bailey has recently analyzed student access and success at community colleges, with a particular focus on the experiences of low-income and minority students. In June 2010, Secretary of Education Arne Duncan appointed Mr. Bailey chairperson of the Committee on Measures of Student Success, which will develop recommendations for community colleges to comply with completion-rate disclosure requirements under the Higher Education Opportunity Act. In 1996, with support from the Alfred P. Sloan Foundation, Mr. Bailey established the Community College Research Center (CCRC) at Teachers College, which conducts a large portfolio of qualitative and quantitative research based on both fieldwork at colleges and analysis of national- and state-level data sets. The findings of much of CCRC's work are found in his most recent book, *Defending the Community College Equity Agenda* (Johns Hopkins University Press, 2006).

**Elaine DeLott Baker** is senior counsel to the vice president for community outreach at the Community College of Denver and director of its accelerated remediation programs, FastStart@CCD and College Connection. She was principal investigator of the Colorado Community College System's Lumina Initiative for Performance and director of its Ready for College grant. Ms. Baker's current interests are the successful transition of low-skilled youth and adults to postsecondary education and training, the challenges of scaling innovation, and the interplay of policy and practice in postsecondary reform. She is a frequent presenter at national forums, webinars, and conferences on issues of acceleration, contextualization, and workforce development. Her recent publications include *Technology Solutions for Developmental Math* (Bill and Melinda Gates Foundation, 2008), *Calculating the Productivity of Innovation* (Ford Foundation, 2009), and *Contextual Teaching and Learning* (Bay Area Workforce Collaborative and the California Community College System, 2009). Ms. Baker serves on the advisory boards of the National College Transition Network and the GED Testing Service and consults with numerous foundations, intermediaries, and public-interest groups.

**Eric Bettinger** is an active researcher in the economics of higher education at Stanford University. His research is quantitative and uses statistical techniques to identify causal relationships between components in higher education and student outcomes. In recent years, he has published several articles focusing on the role of remediation in higher education. Mr. Bettinger has also published articles about the effects of need-based financial aid on student retention. Using statistical tools and exploiting “natural experiments,” his research suggests that need-based awards significantly improve students' likelihood of persisting in higher education after the first year. In other work, Mr. Bettinger has studied the role of adjunct faculty and other faculty characteristics in student outcomes. He has experience conducting randomized interventions to examine the factors that impact student success in primary and secondary school, and he helped conduct research on educational voucher programs in Colombia and the United States.
Currently, Mr. Bettinger is involved in evaluating a randomized experiment that streamlines the financial-aid application process for low-income families in the United States.

**Angela Boatman** is a doctoral candidate at the Harvard Graduate School of Education and holds an M.P.P in public policy and an M.A. in higher education, both from the University of Michigan. Her research focuses on evaluating college-access policies, particularly in the areas of postsecondary remediation and financial aid. Past projects include an examination of the effects of remedial and developmental courses in Tennessee and a multicohort evaluation of the Gates Millennium Scholars Program, both coauthored with Bridget Terry Long. Ms. Boatman's dissertation focuses on a multi-institution evaluation of innovations in the delivery of remedial courses in Tennessee. She previously worked at State Higher Education Executive Officers, researching state tuition, fees, and financial-aid policies. She also taught courses at Brown University on program evaluation and policy analysis. Ms. Boatman has participated in research workshops sponsored by the Ford Foundation, the Interuniversity Consortium for Political and Social Research, the Association for the Study of Higher Education, and the Spencer Foundation. She has presented at numerous conferences and received a Harvard Dean's Summer Fellowship in 2009 and a Ford Foundation Pre-Dissertation Fellowship for the quantitative study of higher education policy in 2009–2010.

**Brian Bosworth** is the founder and president of FutureWorks, a private consulting and public policy research firm based in Seattle, Washington, and focused on postsecondary education and regional economic development. Before establishing FutureWorks in 1999, Mr. Bosworth spent more than a decade in international development assistance work in Latin America and twelve years with executive leadership responsibility for state-based economic growth programs in the United States. He also worked as an independent consultant with several state and regional economic-development groups. FutureWorks offers policy research-and-development and consulting services on regional economic development, with a particular focus on issues of equity, sustainable growth, and skill development. Mr. Bosworth has directed several projects designing new approaches to regional workforce education and postsecondary education. These projects typically have involved research, policy analysis and development, and implementation engagement with development practitioners and educators. FutureWorks is now working with national and state organizations to develop and implement strategies to increase postsecondary completion and labor-market success for low-income youth and working adults.

**Matthew Chingos** is a fellow in the Brown Center on Education Policy at the Brookings Institution, a postdoctoral fellow at the Program on Education Policy and Governance at Harvard University, and a research associate and project manager at the Andrew W. Mellon Foundation. He studies education politics, economics, and policy at both the K–12 and postsecondary levels. Mr. Chingos's first book is *Crossing the Finish Line: Completing College at America's Public Universities* (Princeton University Press, 2009, with William G. Bowen and Michael S. McPherson). His current research examines teacher labor markets, class-size reduction policies, citizen perceptions of school quality, online learning, and the college choices of low-income students.
Susan Dynarski is an associate professor of education and public policy at the University of Michigan. She is a faculty research associate at the National Bureau of Economic Research and has been a visiting fellow at the Federal Reserve Bank of Boston and Princeton University. She is an editor of the Journal of Labor Economics and Education Finance and Policy. Ms. Dynarski's research focuses on charter schools, demand for private schooling, historical trends in inequality in educational attainment, and the optimal design of financial aid. Her previous research explored the impact of grants and loans on educational attainment and the distributional consequences of tax incentives for college saving. Ms. Dynarski has testified before the Senate Finance Committee, the House Ways and Means Committee, and the President's Commission on Tax Reform. Her research has been funded by the Institute of Education Sciences, the Russell Sage Foundation, and the National Institute of Aging.

Sara Goldrick-Rab is an assistant professor of educational policy studies and sociology at the University of Wisconsin–Madison, and senior scholar at the Wisconsin Center for the Advancement of Postsecondary Education. Her research on college access and success has been recognized by the William T. Grant Foundation's Faculty Scholars Award and the National Academy of Education's postdoctoral fellowship, and received more than $3 million in support. Recently, she was lead author of a Brookings Institution blueprint used to craft President Barack Obama's American Graduation Initiative. She codirects the Wisconsin Scholars Longitudinal Study, an experimental evaluation of the impact of need-based financial aid on college graduation.

Arthur M. Hauptman has been an independent public policy consultant specializing in higher education finance issues since 1981. An internationally recognized expert, he has written extensively on student financial aid, fee setting at public and private institutions, and the public funding of institutions in the United States and around the world. A consistent theme of his work is that public policies are more effective when these three key elements of higher education financing are linked systematically. In the United States, Mr. Hauptman has consulted with many federal and state agencies as well as higher education associations and institutions. He played key roles in developing the rationale for a number of federal programs, including direct student loans, income-contingent repayment, GEARUP, and tuition tax credits. For states, he has argued for counter-cyclical policies to address the adverse effects of recessions, tying public-sector tuition fees to general income growth rather than costs, and paying institutions on the basis of their performance. Internationally, he has consulted with the governments or funding bodies in more than two dozen industrialized and developing countries to develop financing strategies for tertiary education.

Diane Auer Jones is currently the vice president for external and regulatory affairs at Career Education Corporation. Trained as a molecular biologist, Ms. Jones spent the first thirteen years of her career working as a laboratory researcher and community college biology professor before moving to a career in public policy, which began during her term as a program director at the National Science Foundation. From there she moved to Capitol Hill, where she was first a professional staffer and then acting staff director for
the Research Subcommittee of the House Committee on Science. She spent several years as Princeton University's director of government affairs, but returned to government as deputy to the associate director for science in the White House Office of Science and Technology Policy. Ms. Jones was then nominated by the president and confirmed by the Senate to serve as the assistant secretary for postsecondary education at the Department of Education. She has a deep interest in preserving the integrity and rich diversity of the American system of higher education, while also improving access and success for those students who have been underserved by traditional institutions and educational pathways.

Andrew P. Kelly is a research fellow in education policy studies at AEI and a doctoral candidate in political science at the University of California–Berkeley. He oversees the higher education work of AEI's education policy department. His research focuses on higher education accountability, congressional policymaking, and political behavior. As a graduate student, Mr. Kelly was a National Science Foundation interdisciplinary training fellow and graduate student instructor. Previously, he was a research assistant at AEI, where his work focused on the preparation of school leaders, collective bargaining in public schools, and the politics of education. His research has appeared in Teachers College Record, Educational Policy, Policy Studies Journal, Education Next, Education Week, Insider Higher Ed, and various edited volumes.

Geri Hockfield Malandra was appointed as provost of Kaplan University in September 2010. Previously, she founded and was principal of Malandra Consulting LLC, a company created to assist higher education leaders and connect stakeholders in developing and implementing outcomes-focused management, accountability, and policy initiatives. She served as senior vice president for leadership, membership, and policy research at the American Council on Education. Before this, Ms. Malandra was vice chancellor for strategic management for the fifteen-campus University of Texas System, where she led the development of its ten-year strategic plan, its first comprehensive accountability and performance reports, and a system-wide academic leadership institute. She also served as executive vice chancellor ad interim for academic affairs, overseeing the work of the nine universities. Her public service includes an appointment by Secretary of Education Margaret Spellings to serve as a member and vice chair of the National Advisory Committee on Institutional Quality and Integrity. At the University of Minnesota, as associate vice provost, Ms. Malandra led the development of Minnesota's first comprehensive accountability reporting system, as well as policy initiatives and legislative reports on issues related to accountability, accreditation, academic program review, and planning issues. At Minnesota, she held earlier management and policy positions focused on faculty and research development and organizational improvement in the College of Liberal Arts and the College of Continuing Education.

Dewayne Matthews is vice president for policy and strategy of the Lumina Foundation for Education. Mr. Matthews has served in various higher education leadership roles, including senior adviser to the president and vice president of the Education Commission of the States, director of programs and services for the Western Interstate Commission for Higher Education, and executive director of the New Mexico Commission on Higher
Education. He has been a legislative staff member, faculty member, and university trustee, and he has worked with higher education institutions in Mexico, Canada, and Japan. Mr. Matthews began his career as a first-grade teacher in Taos, New Mexico. He received an honorary doctor of humane letters from Marycrest International University.

Eduardo M. Ochoa is assistant secretary for postsecondary education at the Department of Education. He is the secretary of education's chief adviser on higher education issues and administers more than sixty programs, including the Fund for the Improvement of Postsecondary Education. The Office of Postsecondary Education also runs the Byrd, Fulbright, Javits, and McNair programs and certifies all regional and national accreditation agencies so that they may qualify institutions to receive federal financial aid and Pell grants. Before joining the Department of Education, Mr. Ochoa was provost and vice president for academic affairs at Sonoma State University.

George Pernsteiner has been chancellor (and acting chancellor) of the Oregon University System since July 2004, leading its budget and legislative process, supporting and facilitating universities' efforts to achieve system goals and their educational missions, and creating partnerships among campuses, community colleges, and K–12 institutions. Mr. Pernsteiner's other career accomplishments include senior finance and administration positions with the University of California–Santa Barbara, Portland State University, the University of Oregon, the Oregon University System, and the City of Seattle.

Richard Petrick served the Ohio Board of Regents in a number of leadership roles for twenty years. He retired from the Regents in August 2010 as vice chancellor for finance and data management. Previously, Mr. Petrick served as budget director and associate vice chancellor for finance. Before joining the Regents, he worked for the Ohio General Assembly as an education finance analyst and division chief for the nonpartisan Legislative Budget Office. In the past ten years, Mr. Petrick focused much of his work on developing and implementing performance-based subsidy and financial-aid programs, improving efficiency and productivity, and raising revenue for agency and campus operations through grants and interagency and interstate initiatives. He has been a frequent contributor to national, regional, and state higher education initiatives, serving as a participant, presenter, or moderator at the State Higher Education Executive Officers and Midwest Higher Education Compact professional-development and policy-planning conferences, as well as many state, campus, and private initiatives, such as the Aspen Institute.

Travis Reindl oversees the postsecondary education work area in the National Governors Association's Center for Best Practices, concentrating on postsecondary access and completion. He is also the lead on the 2010–11 National Governors Association Chair's Initiative, which focuses on increasing college completion and productivity. He most recently served as state policy and campaigns director at CommunicationWorks LLC, a Washington, D.C., public affairs firm. From 2006 to 2008, he was program director at the Boston-based Jobs for the Future, where he led Making Opportunity Affordable. Previously, Mr. Reindl headed the state policy analysis unit at the American
Association of State Colleges and Universities and oversaw government relations and institutional research for the South Dakota Board of Regents.

**Josipa Roksa** is assistant professor of sociology at the University of Virginia, with a courtesy appointment in the Curry School of Education. She is also a faculty affiliate at the Center for Advanced Study of Teaching and Learning and the Virginia Education Science Training Program. Ms. Roksa's research examines social stratification in educational and labor-market outcomes, with a focus on higher education. She is particularly interested in understanding how families transmit advantages to their children, how interactions between the educational system and the labor market produce unequal patterns of individual attainment, and whether and how much students are learning in higher education. Ms. Roksa is currently conducting various studies examining how young adults' transitions into work, marriage, and parenthood explain socioeconomic and racial/ethnic inequalities in college completion and subsequent labor-market outcomes. Moreover, with Richard Arum, she is conducting a large-scale study of learning in higher education, forthcoming in *Academically Adrift: Limited Learning on College Campuses* (University of Chicago Press, 2011).

**Mark Schneider** is a visiting scholar at AEI and a vice president at the American Institutes for Research, based in Washington, D.C. He served as the US commissioner of education statistics from 2005 to 2008 and a deputy commissioner in the National Center for Education Research from 2004 to 2005. He is also a distinguished professor emeritus of political science at the State University of New York–Stony Brook. Mr. Schneider is the author of numerous articles and books on education policy. His most recent book is *Higher Education Accountability* (Palgrave, December 2010). He also wrote *Charter Schools: Hope or Hype?* (Princeton University Press, 2007) and *Choosing Schools* (Princeton University Press, 2000), which won the Policy Study Organization's Aaron Wildavsky Best Book Award. His current work focuses on accountability in higher education and charter schools.
Documents & Links

Financial Aid: A Blunt Instrument for Increasing Degree Attainment- Eric Bettinger

The Challenge of Scaling Successful Policy Innovations: A Case Study of Three Colorado Community College System Grants- Elaine D. Baker

Remediation: The Challenges of Helping Underprepared Students- Bridget Terry Long

Increasing Higher Education Attainment in the United States: Challenges and Opportunities- Arthur M. Hauptman

Graduation Rates at America’s Universities: What We Know and What We Need to Know- Matthew Chingos

The Ohio Experience With Outcomes-Based Funding- Richard Petrick

Equalizing Credits and Rewarding Skills: Credit Portability and Bachelor’s Degree Attainment- Josipa Roksa

Efforts to Improve Productivity: Impact of Higher Education Reform in Texas- Geri H. Malandra

Can Community Colleges Achieve Ambitious Graduation Goals?- Thomas Bailey

Apprenticeships as an Alternative Route to Skills and Credentials- Diane Auer Jones

Certificate Pathways to Postsecondary Success and Good Jobs- Brian Bosworth
Financial Aid: A Blunt Instrument for Increasing Degree Attainment

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Higher education is a gateway to economic mobility, and as the returns to college degrees have increased over time, so too has the demand for higher education increased among every socioeconomic group. Yet, after years of emphasizing college access, policymakers have become increasingly concerned with college completion. The reason is simple. While attendance rates have risen dramatically for all socioeconomic groups in the United States over the last four decades, completion rates have not kept pace.

For example, between 1971 and 2001, total enrollment increased by 78 percent while degree receipt increased by only 48 percent. Additionally, while the percentage of 23-year-olds with some college experience increased by 31 percent between 1971 and 1999, degree completion by this age increased by only 4 percent. Part of this decline is due to students taking more time to complete degrees, yet whereas the U.S. previously led the world in the percentage of the population having bachelor’s degrees, it has now lost that leadership. Over the last three decades, cohort-based completion rates have increased by 2 to 3 percentage points across cohorts in the U.S. while other OECD countries such as the UK and France have seen 10-15 percentage point increases in completion rates. While the change in leadership in completion rates may be as much about European policies and practices as any other U.S. explanation, the change in leadership has brought renewed attention to completion rates in U.S. higher education.

College affordability is one potential and oft-cited reason why some students may start college but not complete it. College affordability is frequently mentioned by policy makers, and college financial aid policies such as the Federal Student Loan Program and the Pell Grant program are the most visible federal policies aimed at changing college attendance and completion. Because of the increased concern with college retention, recent federal and state
financial aid policies (e.g. Federal Academic Competitiveness Grants) have specifically aimed at improving retention.

The efficacy of financial aid policies has received substantial interest from educators, policymakers, and academics. As we discuss below, most of the research has focused on whether financial aid has increased college access and students’ choice across colleges. Only recently have researchers begun studying the relationship between financial aid policies and college completion.

This paper focuses exactly on the relationship between financial aid and college retention and completion. We make three contributions to the academic discussions. First, we review the ongoing literature in education, economics, and sociology which particularly focuses on how financial aid policies affect college outcomes. Second, we discuss the cost effectiveness of financial aid programs. We specifically discuss the potential for state and federal financial aid programs to increase college attainment. Finally, we review innovative policies which can improve the efficacy of financial aid in increasing college retention and completion. We make a few additional remarks about the political economy of financial aid programs.

**Background**

*Federal and State Financial Aid Policies*

We start by providing a brief overview of the scale and scope of financial aid programs. There are a few ways to partition aid programs. One can partition them by who provides the financial aid program. Federal and state programs are the largest and most visible programs; however, institutional aid and aid foundations are also prominent sources of financial aid. One could also partition financial aid programs by the criteria used to award the financial aid. Need-
Based and merit-based aid are the most common forms of aid. Some special programs may use other special criteria for determining eligibility. For example, the GI Bill provides aid to military veterans regardless of need or merit. Another potential partition is the form of financial aid. The most visible forms of aid are grants and loans, but aid also takes such forms as tax credits, employer tuition programs, work-study programs, and college savings programs. State subsidies to higher educational institutions may also be an indirect source of financial aid to students. In this paper, we are going to narrow our focus to need-based and merit-based grant programs. These programs have received the most attention in the academic literature, and these programs have been highly visible in policy discussions.

The College Board estimates that students in the 2009-2010 school year received 154.5 billion dollars in financial aid. Of this, 18 percent or about $28.2 billion came through the Federal Pell Grant program. States provided an additional $8.6 billion in grants to students and institutions provided an additional $26.0 billion in grants. The largest component of aid is the Federal Student Loan Program which makes up $65.8 billion, or about 43 percent, of all federal aid. Until recently, the federal government did not award merit-based financial aid. The Federal Academic Competitiveness Grant is the first federal award to include a merit component. Other federal grant programs, including the Academic Competitiveness Grant and SMART grants made up an additional $12.0 billion in aid. The grants upon which we focus – the Pell Grants and state grants – make up about one-quarter of the overall financial aid awarded to students.

Prior Research on the Link Between Financial Aid and College Access and Choice

Most of the existing literature on the effects of financial aid focuses on need-based and merit-based grants and their impact on college attendance and college choice. Most of the work
here is from need-based programs. Early reviews such as Leslie and Brinkman suggest that college financial aid has a positive impact on the likelihood of attendance. Leslie and Brinkman report that financial need significantly reduces the likelihood that low-income students would attend college. They argue that financial aid increases attendance by at least 20 percent in low-income families. The impacts were smaller for middle-class families. Kane and Ehrenberg and Sherman provide similar positive assessments of need-based aid.

One of the weaknesses in the early financial aid literature was its limited capacity to identify statistically the causal impacts of need-based aid policies. The problem is that receipt and the size of students’ federal need-based grants are correlated with several confounding variables. For example, poorer students are more likely to receive aid and their aid awards are typically larger. By contrast, students who attend more selective and expensive colleges receive larger federal need-based grants than students who attend other institutions. Since academically prepared students are more likely to attend selective and expensive colleges, the size of aid awards may be larger for students with strong academic credentials than for others. In order to account for confounding factors, a number of researchers have turned to experimental and quasi-experimental methods to identify the impacts.

The first set of studies of these quasi-experimental studies focused on the introduction of the Pell Grant program. The results were large disappointing. Researchers failed to find any significant positive enrollment effect coming from the Pell Grant program. Other studies have concluded that Pell Grants have not improved enrollment rates among low-income students and minorities but that they have affected which colleges students choose to attend.

Starting in early 2000, a series of other studies focused on need-based grants exploited other "natural experiments," such as discontinuities in aid awards, to identify the causal effects of
financial aid programs. For example, Dynarski uses discontinuities arising from the removal of the Social Security Administration’s Survivor Benefit Program. By comparing students who were eligible in the last year of the program and students who would have been eligible had the program continued, Dynarski finds sizable effects on both access and completion. The loss of financial aid led to a drop of almost 25 percentage points in the likelihood that students attended college.

Kane presents similar evidence. He uses discontinuities in the Cal Grant award program to estimate the impact of the program on college decisions. He finds that the grant increased college attendance by 3 to 4 percentage points. He also concludes that the program affected college choice, as well. Seftor and Turner focus on how need-based aid affects older, nontraditional students. They examine changes in the Pell Grant award which made some nontraditional students eligible. They find that Pell Grants cause increased enrollment by about four percentage points.

The most studied merit-based program is the Georgia HOPE Scholarship. The program awarded free tuition to high school students who maintained a B-average in high school. Dynarski and Cornwell, Mustard, and Sridhar examine the effects of the HOPE scholarship. They find that enrollment increased by 3.7 to 4.2 percentage points in response to the program. There was also an increase of students who chose to attend Georgia colleges rather than to attend an institution located in another state. In summary, the evidence on the effectiveness of aid is mixed with some more recent causal analyses suggesting aid has a small positive effect on enrollment.
Prior Research on the Link Between Financial Aid and College Retention and Completion

In terms of measuring the effects of aid on college outcomes, the literature is much less developed. In recent years, many studies have estimated the impact of need-based and merit-based awards on college graduation and retention rates.

Most of the studies focus on need-based programs. Dynarski finds that the elimination of the social security death benefit reduced retention as well as attendance. The results suggest that a $1,000 increase in aid improves retention by 3.6 percentage points. Bettinger uses discontinuities in the Pell formulae caused by small differences in family size and the number of kids in college. He finds that Pell Grants increase students' persistence rates during their first year in college. His work implies that a $1,000 increase in Pell Grant awards leads to a 3 percent increase in persistence in students’ first-years.

Recent work by Goldrick-Rab and Harris examines the effects of need-based awards on students’ outcomes. They evaluate a randomized experiment in Wisconsin which increased aid to some students after their initial enrollment in college. During the first two years of the additional aid, they find no effects on persistence. After two years of the grant, individuals who received the extra grant were more likely to have completed at least 60 credits.

Bettinger examines the effects of a change in Ohio’s need-based grant formula. Ohio moved from using income and family size as the only determinants to using students’ estimated family contributions from the FAFSA form as the only criterion. There were some students who benefited from this change; some who were not affected; and yet others who were worse off as a result of the change. Bettinger finds that students who benefited from the change were two percentage points more likely to persist after their first year in college as a result of the new program.
In terms of merit-based programs, Dynarski (2008) shows that large, state-run merit programs also increased persistence and completion rates.\(^1\) Dynarski estimates that persistence rates increased by 5 to 11 percentage points and that degree completion increased by 3 to 4 percentage points. The renewal of students’ financial aid awards was contingent on academic success and progress in school. It is unclear whether the observed effects arose from the financial aid award, the conditionality of the awards, or some combination of both.

The most innovative work to date has come from MDRC. Over the last few years, MDRC has conducted a series of financial aid experiments aimed at testing new ways to improve retention and financial aid. Given that these policies shed light on possible innovations to financial aid policies, we review these studies in greater detail below.

**Potential of Grant Programs to Reduce the Gap**

The evidence on the effects of need-based and merit-based grants on college retention and completion suggests that grant aid can improve these outcomes. These results are certainly encouraging to individuals concerned about college completion. The real question is whether the effects are large enough and cheap enough to provide a cost effective solution to increasing college retention and completion outcomes. Or similarly, can grant aid be scaled up in a way in which it can significantly reduce gaps in college completion and retention?

If we want to understand whether grant aid can increase college retention and completion, we need to know to what extent the gaps in higher education completion are attributable to financial factors. If, for example, financial barriers are not the reason that students drop out, then we do not need more generous financial aid programs. The question is how much can and do we need financial aid to solve the completion problem.
Identifying the exact size of financial barriers is somewhat difficult. When we look at socioeconomic status, there has been a persistent gap of about 30 percentage points between the poorest 40 percent of the population and the richest 20 percent in terms of college attendance. While this gap has narrowed slightly in recent years, it may suggest the magnitude of the gap. In their survey of the literature, Leslie and Brinkman claimed that 25 to 50 percent of students reported that they would not attend in the absence of aid.

Additionally, students’ responses on surveys suggest that finances are a significant barrier. St. John, Cabrera, Nora, and Asker, for example, claim that half of the variation in student persistence can be explained by financial variables. Other researchers have also reported that finances are a significant barrier. In 2006, the Advisory Committee on Student Financial Assistance also identified college costs as a major concern for academically prepared high school students. In the 2006-2007 follow-up of the Beginning Postsecondary (BPS) Cohort, about 10 percent of students who dropped out claimed that finances were a significant reason for their decision.

So where does that leave us? If we think that the gap between rich and poor families is due to financial barriers, then the size of the gap is about 25 to 30 percentage points. This is a generous upper bound since other factors such as culture, preparation, and information may contribute to the gap as well. On the other hand, if we believe the survey data from the BPS study, then the gap is about 10 percentage points.

Across the studies we reviewed, the estimated effect of $1,000 in need-based aid was a 2 to 4 percentage point increase in retention. Merit-based programs studied in Dynarski gave a $2,500 subsidy per student and had a slightly larger effect on persistence (5 to 11 percentage
points) and degree completion (3 to 4 percentage points). As we noted above, funding in these programs was also tied to academic performance.

We will start by assuming that the effect on persistence is three percentage points per thousand dollars. We’ll further assume that this effect varies linearly with money so that a $2,000 grant implies a 6 percent increase in retention. If we used the BPS statistic of 10 percent of students claiming financial hardships were limiting enrollment, then we would need a $3,300 increase per student in order to convince the 10 percent of students who are making decisions based on money to not leave their first institution. If the number of students truly making enrollment decisions because based on finances is greater than 10 percent, then the estimated costs would be even larger.

There are a few problems with this simple extrapolation. First, this $3,300 increase is not just for the marginal students. Given our ability to target students, the increase would have to be for all students who receive federal aid. To put this in perspective, this would require almost doubling the average 2009-2010 Pell Grant award of $3,646. The increase that would be necessary is about 60 percent of the maximum 2009-2010 Pell Grant award of $5,350. In 2009-2010, about 7.7 million students received Pell awards. The added overall expenditure would be almost $30 billion dollars. Second, the estimated effect may not be linear. The estimated impact of three percentage points per thousand dollars may not be reasonable. As we move to students with greater financial need, the amount of resources needed could be greater and the responsiveness to resources could be even lower. Additionally, some of the studies that the estimated effect for the marginal student is smaller than three percentage points. In any of these cases the overall expenditure would be even higher. Finally, we have assumed that colleges will not adjust their costs in response to an increase in Pell awards. We discuss this more below.
So could this increase be cost-effective? Most studies reviewed above have very little information about the cost effectiveness of their programs. The researchers were primarily concerned with identifying the impacts of the program, and in many cases, they lacked information on the overall costs of the program. Moreover, the current studies identify the effects on the marginal student. We have to make assumptions on whether the effect is constant across other populations. In other words, in current studies, we might need $1,000 in aid to increase the likelihood that a “marginal” student stays. If we examine a student for whom financial aid barriers are even stronger, do we need more money? Do students become less responsive to aid? These questions are unanswerable in the current data, and so we have to make assumptions in any cost-benefit analysis.

There are two studies which have done extensive cost-benefit analysis. Dynarski examines the cost-effectiveness of the HOPE scholarship programs that are scattered throughout Southern U.S. states. In her analysis of these merit-based grant programs, Dynarski includes the costs of providing the full cost of the scholarship, the foregone earnings of attending college (for those affected by the program), and the deadweight loss associated with additional taxation. She notes that 80 percent of individuals receiving scholarships are completely unaffected by the program. So the key is to compare the benefits of the program to the 20 percent affected by the program to the costs accrued across all. In this case, Dynarski finds that internal rate of return is about 7.9 percent.

Bettinger conducts a similar analysis of need-based aid policies in Ohio. Bettinger only computes effects on retention during the first year, and he has to extrapolate how the effect of retention in the first year will translate into eventual effects on degree completion. He outlines “best-case” (effect is constant across years to eventual degree completion) and “worst-case”
(effect attenuates over time) scenarios. Similar to Dynarski, he incorporates costs of the subsidy and the opportunity costs. He does not include deadweight losses from tax collection. He compares the costs to the benefits accrued by the marginally affected students. The best-case scenario suggests that Ohio’s change to Ohio’s need-based grant program provides a 5 percentage point return while the worst case scenario suggests a rate of return of -0.01 percentage points. The “best case” scenario assumes that effects on first-year persistence are similar to effects on degree completion. In the merit-based grant programs, the effect on persistence was much smaller (as much as half) the size of the effect on persistence. If this is the case, then the rate of return and any cost benefit analysis would be much lower and we are closer to the worst case scenario.

In sum, we have two key concerns about the role of financial aid policies in increasing retention and completion rates. First, we do not know the size of the gaps attributable to financial factors. Given that the effects of need-based and merit-based aid are positive, it is clear that more generous financial policies can help, but we do not know how big the gap that can be attributed to financial aid factors. At what point does increasing aid lose its effectiveness? The second and more severe problem is the magnitude and the potential cost-effectiveness of expanded grant aid policies. We have to make significant assumptions to get a positive rate of return to these programs. So given these concerns, we turn our attention to innovative programs which might represent more cost effective ways to increase retention.

Examples of Innovative Policies

In recent years, a number of modifications to financial aid policies have been discussed or tested in the field. We divide these policies into three categories: financial awards conditioned on
Conditional Financial Awards

- Basing financial aid on attainment. One policy which has received attention links either additional financial aid or continued financial aid on students’ academic performance. For example, from 2008-2010, MDRC’s Opening Doors Program tested a performance-based financial award in Louisiana. In the programs, students received financial aid and received additional support which was conditional on being enrolled at least part time and having at least a “C” average. Awards could be larger if individuals enrolled full-time.

According to MDRC’s evaluation in Louisiana, students who were eligible for the $2,000 additional financial aid were 6.5 percentage points more likely to persist four semesters after the random assignment. Students had also completed more college credits and had spent more time attending college full-time. MDRC is currently testing these scholarships across six states. The effect is larger than that found in the need-based aid programs we reviewed but similar to the effects found in Dynarski’s evaluation of the HOPE scholarship programs which also had a merit component. In the Georgia’s HOPE scholarships, students’ performance was evaluated at specific markers (e.g. 45, 90, 135 quarter hours). Students’ awards were renewed conditional on academic progress and performance.

However, it is interesting to note that the Opening Doors intervention is likely much more cost-effective then HOPE or the need-based programs we previously reviewed since it was targeted at low-income, single-family households. The narrow
targeting reduced the number of individuals to whom additional aid might be given inefficiently (i.e. given to individuals who did not require it for improved retention).

*Changing Financial Aid Framing and Processes*

- **Financial Aid Packaging.** As in the United States, some Canadian students who are eligible for subsidized loans have not been utilizing Canada’s subsidized loan program as a means for financing college. Palameta and Voyer conducted a laboratory study attempting to identify reasons why students fail to utilize the loan programs.\(^{26}\) They gave students a hypothetical choice between receiving money today or an educational grant in the future. They observed which students selected an educational grant. They then made the same offer but included an optional student loan as part of the financial aid package. About 30 percent of students who had accepted the financial aid package the first time refused it when the package included an optional loan package. They concluded that students’ lack of familiarity with loan programs contributed to their reluctance to utilize the financial aid offered to them. They advocated attempting to decouple the award processes for grants and loans. They are currently attempting to conduct additional research on whether the decoupling process will lead to greater rates of take-up.

- **Simplifying Aid Applications.** One of the much discussed difficulties in receiving financial aid is the complexity of the financial aid application process. Even the poorest families often have to submit more information to the U.S. Department of Education in the FAFSA form than they have to submit to the Internal Revenue Service in their annual tax filing. Bettinger, Long, Oreopoulos, and Sanbonmatsu attempted to offer a simplified process and assistance to individuals who would be eligible for financial aid.\(^{27}\) They find that the simplified process
and assistance led to a 25 percent increase in college attendance. The preliminary results suggest that the increase in college attendance continued into at least students’ second years in college.

Additionally, the simplified FAFSA process also helped students who already were attending college. Simplifying the application process increased the likelihood that students received financial aid.

- **“Paycheck” Financial Aid.** Typically financial aid is awarded in a lump sum at the start of a semester. MDRC is currently conducting a research project focused on changing the disbursement schedule. Instead of awarding financial aid as a lump sum, this project attempts to model financial aid as a normal paycheck. The basic idea is that students are not good at budgeting their funds, and they may spend their money early in the semester making it so that they need additional funding at the end. Awarding financial aid in regular disbursements essentially takes care of the budgeting for students during the semester. Moreover, making financial aid appear like a paycheck may create the impression in students that the aid is conditional on effort and attendance during that period.

**Improved Targeting**

- **Targeting Times of Need** There are many anecdotes suggesting that students, especially non-traditional students often experience sudden, unexpected financial hardship which makes it difficult for students to continue in their schooling. The Lumina Foundation funded one such program to aid students in times of need, “The Dreamkeepers and Angel Fund.” The fund provided students with “emergency” money for significant hardships. “Transportation” and “housing” were the most likely uses of the funds in practice. Unfortunately, there has not
been a formal test of the program although reports from administrators suggested that the program’s impact had been positive.

As we mentioned above, one of the difficulties in financial aid policy is finding the truly marginal student. Policies which can identify these individuals are likely to be more cost effective. However, the difficulty is trying to find characteristics which identify marginal students and then writing policies which can accurately track these students.

As an example, consider the change in financial aid in Ohio. As Bettinger shows, Ohio switched their financial aid from a moderate program (the Ohio Instruction Grant – OIG) to a very generous program (the Ohio College Opportunity Grant – OCOG). The new grant used the “expected family contribution” as defined from the FAFSA forms rather than just family income. About 25 percent of all students who filed the FAFSA in Ohio received additional awards. In the 2006-2007 school year, 11,095 students received higher awards under OCOG than they would have received under its predecessor. On average, the state, under the new program, had to increase its expenditure by roughly $860 per student for 11,095 students. Of those 11,095 students, roughly 220 changed their behavior and stayed in college for an additional year. The rest either dropped out like they planned or stayed in college as they planned. The entire stream of benefits is realized by these 220 students.

Our point is not that EFC is a “bad” targeting measure. It may indeed target needy families, but as we think of incremental changes in financial aid policies, improving the targeting would make the programs much more cost effective. For example, suppose that we could identify which students were most likely to benefit from additional aid in the case of the changes in Ohio. Improving the targeting would essentially reduce the total number (11,095) that
receives additional aid. The problem, of course, is that we have difficulty changing a policy to make it more directed. First, we have to identify specific characteristics which are closely linked to students’ likelihoods of being a “marginal” student. Second, we have to convince policymakers to alter policies to track these characteristics. Such targeting could be either illegal (e.g. if race/ethnicity were a predictive characteristic) or politically improbable (e.g. if the targeting limited the opportunities for middle income families). Improved targeting is a largely unexplored topic, and it likely sounds simpler than it truly is. Nonetheless, if future studies and interventions are sensitive to the role of targeting, our knowledge of and capacity to use better targeting measures will also increase.

**Enacting Change**

If we know that there are successful programs, are there ways for us to improve the likelihood of take-up of these successful programs? And if we identify policies which are not cost-effective, how do we shift away from these programs?

One of our primary barriers to change is a lack of knowledge about the cost-effectiveness and specific mechanisms surrounding new programs. Among the policies which we listed above, few have been tested on more than a few hundred individuals. We do not know what the effects of these programs would be if the programs were scaled up. Additionally, the interventions which have been evaluated generally do not include rigorous cost-effectiveness analysis. More information about costs would be useful for projecting the potential for these interventions to be scaled up.

We have written this last paragraph as if conducting financial aid studies was a simple endeavor. Unfortunately it is not. Altering financial aid packages requires substantial amounts
of resources. MDRC’s performance based financial awards were $2,000 per individual. To estimate a 3 percentage point effect on retention (assuming a base retention rate of 20 percent and 80 percent power), we would need close to 1,000 people in the study. While not everyone will take-up the awards, expenditures could quickly rise as more people took up the financial aid offer. Alternatively, if we wanted to have power to measure a smaller effect or to measure the effects for a specific subsample, it would require even greater financial outlay, and all of these costs ignore the expenses associated with the evaluation. Unfortunately, no single foundation can support such an intervention by itself. Given the large outlay, they may be reluctant to have so much of their portfolio tied up in a single, unproven intervention.

To date, the federal government and most states have been reluctant or have not had the means to test new financial aid schemes. Given that the federal government and state governments control the majority of the financial aid expenditure, they may be in a unique position to test new financial aid products on a larger scale.

While thus far we have focused on implementing and scaling up new interventions, we have made two naïve assumptions. First, we have assumed that existing financial aid policies are changeable. We have assumed that they could either be replaced with a set of more effective policies or that they could be modified in meaningful ways. Second, we have assumed that the political opposition to such change is largely non-existent.

Unfortunately, financial aid policies have a unique place in educational policy. Higher education plays an important role in economic mobility and success, and the most visible issue in higher education is its cost. Parents (and potential voters) are highly concerned about the cost of education and want policymakers to adopt policies which aid them in providing higher educational opportunities to their children. Moreover, the perception that affordability has led to
significant, persistent gaps in educational attainment across socioeconomic lines only reinforces the perceived need for aggressive financial aid policies. If the infrastructure for these aggressive policies relies on existing programs, it may be that the expected overall effect mimics the small effects we currently see in financial aid programs.

Can the federal government and individual states find ways to eliminate ineffective programs? One could argue that the prolonged period in which policymakers allowed the Pell Grant’s spending power to erode could be a response to the perceived ineffectiveness of the Pell Grant program in promoting retention. Given that the “perceived ineffectiveness” is still hotly debated among researchers, it is not clear that policymakers had greater insights into the effectiveness of such policies. The lack of growth in the benefits probably had more to do with political pressures than with a conscious assessment of the costs and benefits of the Pell program. However, the strategy of not allowing a program to keep up with inflation is a way to eventually kill a program.

Another way to eliminate an ineffective program is to shift ownership of its costs. For example, one of William Bennett’s oft-cited criticisms of financial aid policies was that it may have created incentives for individual schools to increase their tuition. Higher tuition influenced decisions to increase need-based awards, and the Bennett hypothesis supposes that institutions respond to increases in financial aid by increasing their tuition. A similar set of incentives may exist when considering the interactions of state and federal financial aid policies.

For example, consider a state which has adopted a costly and largely ineffective financial aid policy. If the policy is politically popular, it is extremely difficult for the state to eliminate the program. Now suppose that the government dramatically increases the generosity of the federal Pell Grant program. A state does not need to increase the generosity of their individual
program. In fact, they could either reduce the generosity or retard the growth of their program. Such a maneuver allows states to keep a politically popular program while greatly reducing its generosity and overall cost. If individual states do engage in such efforts to cannibalize increases in federal Pell Grants, then increases in the Pell Grant schedule may actually be simple ways for the federal government to offset states’ budgetary woes. Ongoing work by Bettinger focuses on measuring the responsiveness of state aid programs to increases in the generosity of the federal Pell Grant.

As we mentioned, most of the rhetoric in the news and elsewhere focuses on tuition growth. There are other costs which can be manipulated. A state which engages in significant tuition subsidies as their financial aid policy of choice may find ways to increase the fees associated with attendance. For example, after the introduction of the Georgia HOPE scholarship, the Georgia legislature limited schools’ abilities to raise revenue by limiting the tuition growth allowed. Limiting tuition growth reduced the overall expenditure in the state. How did the universities respond? Long (2004) shows that the universities increased the rate at which other fees were increasing to compensate for the source of lost revenue.28

**The Role of Financial Aid Policies**

In this paper, we have been purposefully and deliberately critical about the potential of grant programs to increase college retention and completion. We are not advocating removal or an elimination of any program. We are advocating that the federal and state grant programs receive more scrutiny from policymakers and academics. Given that the effects of the program are only now being identified, we know little about its cost-effectiveness. Moreover, the Pell Grant program could potentially be an anchor which impedes policymakers from introducing or testing
new forms of financial aid. If these new forms of financial aid are more cost-effective than existing forms, then such innovation could be Pareto improving.

It could be that states and the federal government already have a plan for innovation. In the most basic courses on the economics of state and local public finance, economists teach students that states can be laboratories for potential national policies. It could be that states are experimenting with new forms of aid, and then if they err, they find ways to step back from expensive programs by “gaming” changes in the federal financial aid policies.

Nonetheless, to date, there are few if any who claim that current federal financial aid policies have done much to encourage completion or to reduce the gaps in attendance between socioeconomic groups. Over the past 40 years, completion has been relatively stagnant especially when compared to the increases in the number of individuals attending college at all. Additionally, the gaps in attendance between the richest and poorest 20 percent of the population have changed little over this time period.

One under-explored topic in this paper is the contrast between what people say and how they act. A number of studies show that individuals tend to blame their financial state as the primary reason for which they discontinue college. While such blame may not be unfounded, the proportion who blame their finances is much larger and potentially a different population than the proportion who actually respond to more generous need-based financial aid policies. More study on this is warranted. Is it really students’ finances or is this a convenient scapegoat for other causes of dropout? Are the additional resources which have been the focus of the studies to date insufficiently generous to cover the financial need? If the financial need was much larger than what was provided in these programs, then more generous policies are needed. However, with the current targeting mechanisms available in federal financial aid policies,
expanding the generosity of these programs may not be cost-effective. The marginal benefit might not be sufficiently large to offset the cost of a large-scale expansion in the program’s generosity. To expand the generosity, we either need to identify more cost-effective forms of financial aid or to find ways to target aid programs more effectively toward the marginal students.


5 For a comprehensive review of financial aid programs, see Dynarski and Demming (2009) and Long (2008).

6 Trends in Student Aid (Washington, DC: College Board, 2010).

7 Leslie and Brinkman, “Student Price Response in Higher Education: The Student Demand Studies.”


18 Eric Bettinger, “Need-Based Aid and Student Outcomes: The Effects of the Ohio College Opportunity Grant,” Northwestern University School of Education and Social Policy (May 2010).


22 Eric Bettinger, “Need-Based Aid and Student Outcomes: The Effects of the Ohio College Opportunity Grant.”


24 Eric Bettinger, “Need-Based Aid and Student Outcomes: The Effects of the Ohio College Opportunity Grant.”


This case study of reform efforts in Colorado addresses the question of why efforts to scale-up successful, small-scale, grant-funded community college innovations and replicate them across institutions and across states have largely been unsuccessful. To answer this question, we examine the trajectory of three grants awarded to the Colorado Community College System (CCCS) from 2004-2010: the *Colorado Lumina Initiative for Performance Costs and Strategies for Serving Academically Underprepared Students*; the Ford Foundation’s *Community College Bridges to Opportunity* project, creating career pathways for low-income adults; and a U.S. Department of Education, Office of Adult and Vocational Education (OVAE) “*Ready for College*” grant, supporting successful transitions to postsecondary education for out-of-school youth and recent high school graduates.

In this brief, I identify a series of challenges community colleges face in their efforts to bring successful innovations to scale, including state funding formulas; the logistical and cultural barriers of scaling within an institution; the lack of effective mechanisms to bring innovations to scale across institutions; the dysfunction of grant timelines; the challenge of maintaining the fidelity of the model; and the absence of a system to track outcomes after a grant cycle has ended. The overarching issues are the critical role that accountability and funding plays in supporting innovation, the necessity to rethink how grants are structured, and the importance of blending authority, leadership, and local expertise in efforts to scale effective practice.

The brief begins with an overview of the context for the reform effort. It proceeds with a description of the initiatives and a review of their achievements, and continues with a discussion of how the experiences of these initiatives can inform our understanding of the challenges of scale. It concludes with recommendations on policy, changes in grant structure, and strategies for replication.
The Context

Profile of the Colorado Community College System (CCCS)

The CCCS is a highly centralized system of 13 community colleges, serving 38 percent of all Colorado resident undergraduates and 45 percent of the state’s minority undergraduates. In 2008-2009, CCCS served over 117,000 students, 26 percent of whom were classified as minorities and 41 percent of whom were certified as Pell eligible. One-year certificates accounted for 40 percent of degrees awarded in 2008-2009, two-year certificates accounted for 13 percent, and Associate of Applied Science (AAS) accounted for 22 percent of degrees awarded. Associate of General Studies (AGS), Associate of Arts (AA), and Associate of Science (AS) degrees, which are transfer-oriented, accounted for the remaining 25 percent. The three-year transfer rate for first-time students in the fall 2005 cohort (2005-2008) was 15.6 percent, with 89 percent of transfer students entering four-year institutions. Of CCCS transfers, 82 percent were part-time students and 18 percent were full-time students. The overall three-year graduation rate in 2009 was 22.5 percent; the minority graduate rate was 17.4 percent.

The Colorado Paradox

Although Colorado ranks sixth in the percentage of the adult population with a postsecondary degree, its high ranking is a product of the immigration of individuals attracted by growth in the job market in those industries that require postsecondary degrees and the state’s quality of life. In contrast, the state ranks 46th in the postsecondary degree attainment of its native-born population. The disparity between the educational levels of the general population and the native-born population termed the “Colorado Paradox” was elevated to a key educational policy issue in Governor Ritter’s administration (2006-2010); however, the resulting
legislation focused almost exclusively on K-12 reforms, with only minimal attention given to improvements in postsecondary education.

The Remedial Challenge

The lack of academic preparation of incoming students is a troublesome characteristic of community college students, both nationally and in Colorado. Remedial course enrollments comprised 21 percent of CCCS’s total student headcount in 2009, with 64 percent of incoming students testing into at least one remedial course and 16 percent into all three remedial subjects: mathematics, English, and reading. Remedial need is more pronounced in urban regions with high minority populations and struggling school districts than in suburban ones. At Community College of Denver (CCD), which serves the metro Denver region, 30 percent of first-time students tested into all three remedial areas, nearly twice the rate of the overall CCCS population.

CCCS remedial students are also more heavily minority, female, and younger than the overall student population, characteristics that are associated with lower rates of college completion. The high numbers and the demographic profiles of recent high school graduates who test into remedial courses is disconcerting, not only for what it says about high school academic rigor, but also for what it portends for student retention and attainment. Fall-to-fall retention for first-time students who tested into remedial courses in 2008-2009 was 45.5 percent, five percentage points below the 50.7 percent retention rate of students who tested into college-level work.
Fiscal and Policy Climate

Since fiscal year 1989-90, state support for higher education in Colorado has decreased from 20.3 percent to 9 percent of the state General Fund. Relative to other state services, the higher education share of state General Fund has been reduced by 55 percent. Significant funding cuts to higher education, beginning in fiscal year 2001-2002, were largely a product of the recession of the late nineties, in conjunction with two constitutional amendments that constrained spending. The Taxpayer Bill of Rights (TABOR) limited the collection of state revenue over the amount collected in the previous fiscal year, in those years when revenues grew faster than the rate of inflation and population growth. Amendment 23 mandated an annual increase in funding for K-12 equal to the rate of inflation plus one percent, a measure designed to help restore K-12 funding, which had suffered severe cuts as a consequence of the TABOR amendment.

Spending cuts to higher education became more pronounced as discretionary spending fell in the wake of the recession. Community colleges saw a 35.3 percent reduction in General Fund Appropriations in FY 2004-05, dropping from $3,565 per resident FTE in 2001-02 to $2,306 per resident full-time equivalent (FTE) in 2004-05.12 A 28 percent increase in tuition and a variety of cost saving measures, such as administrative cuts, greater reliance on adjunct faculty, and reduction in student services were put in place to counter the impact on services from reduced General Fund revenue, but the positive effects of these measures were offset by an 18 percent increase in enrollment during the same period, adding new stresses to the already strained capacity of the CCCS.

Some respite from the negative fiscal impact of the two conflicting spending mandates came with the 2006 passage of Amendment C. The measure, which was supported by a broad
coalition of business, education, and government, including Republican Governor Bill Owens, placed a five-year moratorium on TABOR. But the attempt to slow the precipitous decline in revenues took place before the latest and more pronounced recession, which portends serious financial consequences for CCCS in the years ahead. A modicum of relief came from the American Reinvestment and Recovery Act (ARRA) and from a state constitutional amendment which directed a portion of gaming proceeds to community colleges. Despite these efforts to restore funding, 2010 FTE funding for community colleges stands at the 1993 level, at a little over $2,000 per resident FTE, with another precipitous drop anticipated with the sunset of ARRA funds in 2012.

In the 2010 legislative session, Governor Bill Ritter, looking ahead to the pending shortfall in higher education funding, signed a bill that gives institutions of higher education the authority to raise tuition above the legislatively mandated 9 percent cap, subject to the approval of financial accountability plans that, among other requirements, assure protection for low and middle income students.13

The Three Initiatives

*Focus on Academically Underprepared Youth and Adults*

Beginning in 2004, there was a growing awareness of the importance of postsecondary education to the state’s economic future; along with a recognition of the critical role that remediation plays in the rates of postsecondary attainment. This awareness was strengthened, if not precipitated, by the system’s participation in three national initiatives. The discussion that follows looks at the development and interplay of these initiatives from the perspective of
implementation, the scaling of successful innovations within and across colleges, and the role of policy in efforts to sustain successful innovations for high-risk populations.

The Ford Foundation’s Community College Bridges to Opportunity Initiative

In 2004, Colorado was selected to participate in the Ford Foundation’s Community College Bridges to Opportunity project (Bridges), a five-year, six-state initiative focused on creating community college and career pathways for disadvantaged students. Participating states were awarded $100,000 - $200,000 per year along with technical assistance to support efforts in the grant’s four focus areas: integration of the workforce and academic missions of the colleges, strengthening stakeholder engagement to support colleges, the increased use of data to inform decision making, and efforts to support policy innovations that would lead to systemic changes in how community colleges provide education and training to low-income adults.

Bridges had a modest impact on the development of career pathways through input and refinements to the Career and Technical Education division of the system, but it had other significant impacts: by shaping a communication strategy that helped position community colleges as engines of economic development and as the road to opportunity for individuals; by raising the awareness of the inter-relationship of remediation and low educational attainment through a series of high-profile reports; by funding the development of a longitudinal tracking system that contributed to the capacity for data-driven decision making at the college, system, and state policy levels; and by supporting the development of a cost/benefit analysis that gave colleges a tool to evaluate the cost-effectiveness of different innovations.

The broad communication strategy developed by the initiative helped garner public support for two state legislative measures that averted the likely closure of several community
colleges through potentially catastrophic revenue cuts. In addition to communicating the importance of community colleges to the general public, Bridges resources contributed to a series of annual reports by the CCCS Office of Institutional Research highlighting the remedial needs of the state adult and student populations and the implications of low degree attainment to the state’s economic future.\textsuperscript{14} While the reports themselves did not lead to immediate legislative or system-level changes, they were instrumental in focusing attention on a problem that had been largely ignored and prompted the State Board of Community Colleges to request additional data and recommendations from the CCCS on ways to improve remedial outcomes.

Resources from the project also contributed to the development of the CCCS longitudinal tracking system, which gave the Institutional Research office the capacity to do a more detailed analysis of student progression through the remedial sequence. The first study using the cohort tracking system focused attention on the dismal completion rates of remedial math students, results that were similar to those reported around the same time in the Community College Research Center’s (CCRC) longitudinal tracking of Achieving the Dream remedial math cohorts.\textsuperscript{15} The impact of these discouraging remedial math outcomes, alongside a national study with similar results, was a wake-up call to the CCCS Board and to the system.

While the report did not result in immediate action, it laid the groundwork for significant policy changes over time. By 2010, improving remedial outcomes was included as a goal in the CCCS strategic plan; the remedial agenda was included in the Colorado Department of Higher Education (CDHE) recommendations to the governor, and concrete and coordinated efforts to improve remedial instruction in the colleges became an active part of the CCCS agenda.\textsuperscript{16} In spring 2010, the math chairs of each of the thirteen CCCS colleges met with the system provost to discuss the issues generated by the longitudinal remedial math study. As a follow-up to the
meeting, each college was asked to design a two-year pilot that would lead to improvement in the college’s remedial math outcomes. A formative evaluation of the first year implementation of the remedial math pilots is currently underway.

Bridges resources also funded the refinement and development of a simplified student unit cost/benefit template that could be used by college staff to evaluate the fiscal implications of grant-funded innovations. The template calculated the break-even point and projected revenues of different strategies, based on the retention rates and course taking patterns of students in intervention and matched comparison groups. The tool was used in internal evaluations of strategies developed under the Lumina grant, as detailed below, was included as a resource in the Bridges website Community College Central and was shared as part of 2010 webinar sponsored by the Joyce Foundation’s Shifting Gears project.

The Colorado Lumina Initiative for Performance

The program officers leading the Bridges initiative, John Coburn and Cyrus Driver, understood the importance of leveraged funding and encouraged the CCCS to apply for a Lumina Foundation grant to meet the Bridges objective of “developing models of effective institutional classroom and administrative practices for use by policy makers, college administrators and advocacy coalitions.” The Colorado Lumina Initiative for Performance Costs and Strategies for Serving Academically Underprepared Students began in 2004 with a $650,000 grant for two years, followed by a two-year supplemental grant of $324,000. Yearly grants to the three participating colleges ranged from $30,000 to $86,000, based on the scope of the colleges’ projects. The objective of the initiative was to support the development and
implementation of innovation at the college level and to calculate the cost-effectiveness of different grant-funded strategies for serving academically underprepared students.  

The initiative was structured primarily as a bottom-up effort, with college teams choosing the strategies they would implement, based on an internal assessment of their practices in relationship to evidence-based practices. Through assessment, each college determined its own needs, resources, and capacity and identified strategies based on the assessment. Ongoing data collection was used to evaluate and adapt programmatic design. At the end of the first year of implementation, all three colleges had evaluated and adapted their initial strategies based on student and faculty feedback. 

Front Range Community College’s (FRCC) initial strategies included a hybrid accelerated developmental education format, with one class session delivered on campus and two class sessions delivered on-line; and two learning community formats, one that paired developmental English and math with a college-level sociology course and another that paired developmental English with a single college-level course. Students in both formats were supported by a dedicated case manager that monitored students’ progress and assisted students in negotiating college processes and accessing support services. 

At the end of three semesters, an evaluation by the college’s Office of Institutional Research showed strong preliminary outcomes for the two learning community interventions. Students in both formats had a 45.7 percent higher successful course completion rate than students in the comparison group as well as a higher semester GPA. The learning community that paired developmental English with a single college-level course had stronger outcomes than the three-course pairing, posting a 33.4 percent higher retention rate than the comparison group.
The student unit cost-benefit analysis of the paired developmental English/college-level strategy showed net revenue from higher retention rates, on an average per-student basis of $408 over four terms. Based on preliminary student outcomes, feedback from faculty and staff and the positive revenue outlook provided by the cost-benefit analysis, FRCC began expanding developmental English/college-level pairings and began shifting project costs to the General Fund. Further expansion and ongoing general fund support continued in the third year of the grant. The strategy was replicated at two additional FRCC campuses and new paired learning communities were added. Student numbers increased from an initial population of twenty students a semester to over two hundred students a semester.

Community College of Denver implemented two strategies; an English as a Second Language (ESL) learning community that combined three stand-alone ESL courses in reading, writing, and speaking in a block format; and an accelerated developmental learning community, FastStart@CCD (FS), which compressed two or more levels of developmental courses into a single semester. As with the Bridges initiative, both formats utilized an educational case manager to recruit, screen, and support students, and to monitor student progress. The FS strategy included study groups, faculty professional development, and a mandatory student success course. In addition to the traditional topics in a student success course, such as study skills, time management, and balancing work and family, the FS student success course was organized around career exploration and guidance, culminating in the selection of a college major.

An analysis of student outcomes in the initial ESL cohort after the first semester showed that students in the intervention posted significantly higher retention and course completion rates than students in a matched comparison. Application of the cost/benefit analysis showed an
average per student net revenue of $472 at scale after two terms, with the project reaching the break-even point in the first semester. Net per student revenue after two semesters was $912.\textsuperscript{25} Armed with the preliminary evidence of positive student outcomes and positive revenue projections, program staff successfully advocated for institutionalization of ESL Learning Communities using the college’s strategic planning process. The program was fully institutionalized in 2009 with the transition of the ESL case manager from grant funds to the General Fund. From 2007-2010, the number of ESL learners increased fivefold.

The second CCD strategy, FastStart@CCD, implemented a form of acceleration called “compression”, which combines two or more levels of developmental courses in a single semester. First semester FS outcomes showed a significantly higher course completion rate (47 percent versus 24 percent) and a 50 percent higher semester-to-semester retention rate for students who took accelerated pairings in English, reading, and mathematics, as compared to students in a matched comparison taking a single course in the traditional format.\textsuperscript{26}

In addition to breaking even in the first term, the program generated an average additional per student net revenue of $460 after two terms, which was calculated by comparing the retention rates and course taking patterns of the intervention and a matched comparison. The cumulative average per student net revenue after two terms was $912, with a subsequent analysis over nine terms showing an average per student net revenue of $1,898.\textsuperscript{27} Based on strong outcomes and positive revenue projections, the college began transitioning the costs of coordination and cased management, the two primary costs of FS services, from grant funds to the General Fund. Continued development and expansion from 2006-2010 was provided through two additional grants, Breaking Through and Scaling Up.\textsuperscript{28}
From 2005 to 2010, FS added six new course combinations, including pairings of developmental courses with college level courses. The number of classes and number of students doubled in each of the last three semesters, expanding from a single cohort of 22 students in the first semester to twenty-six learning community cohorts with an enrollment of over 600 students in spring 2011. Two educational case managers provide student support with the help of three work-study students. Coaching to maintain program quality during rapid expansion and curriculum development for new course pairings continues to be funded through a combination of grant carryover and support from the college’s Teaching and Learning Center.

*Colorado Success Unlimited (Colorado SUN)*

In 2007, OVAE awarded an $875,000 two-year grant to the CCCS under its Ready for College initiative. The project, called *Colorado Success Unlimited (Colorado SUN)* centered on the provision of transition services to GED completers and out-of-school youth at seven community colleges. The program design replicated CCD’s successful bridge program, *College Connection*, piloted in 2007 under the college’s *Breaking Through* grant. The College Connection model incorporated the key components of FS: accelerated learning communities, case management, career exploration, and professional development. In the second year of *Colorado Success Unlimited (Colorado SUN)*, *College Connection* was offered in a credit-bearing format, which allowed students to qualify for Pell grants and colleges to generate FTE. The program was offered by some colleges in a summer bridge format. Other colleges offered it during the first half of the traditional semester, giving students the opportunity to enroll in late start classes in the second half of the semester.
A preliminary evaluation of the project showed strong outcomes for Colorado’s Ready for College (RFC) learners: 65 percent of RFC students advanced one or two adult education levels in developmental math, 60 percent in developmental reading, and 47 percent in developmental English. Enrollment in college-level courses was high, with 80.3 percent of RFC learners enrolling in college-level courses, earning an average of 10 college credits. With the grant only recently ended, it is too early to know the extent to which College Connection will be scaled. At least two colleges are continuing the program, while others are adopting program components. A second outgrowth of College is a joint project of two CCCS colleges and partnering workforce centers supporting the successful transition of students referred by the workforce to postsecondary education. The project, called the College Career Navigation Initiative, is administered by the CCCS and funded through a Department of Labor incentive grant.

Taken together, the Ford, Lumina, and OVAE grants generated a series of positive outcomes. They elevated the public perception of community colleges and helped the system focus on developing and implementing creative new approaches to serve traditionally underserved students. The grants also increased the capacity of the system and colleges to measure outcomes and financed the development of a data-driven means to demonstrate the financial viability of innovations to fiscal-oriented decision-makers.

Discussion

Achieving Scale at the Institutional Level

Despite these early successes, many barriers remain to full-scale adoption and implementation of these strategies. Scaling within an institution requires support from the
critical ranks of all levels of leadership, beginning with the president, who identifies an innovation as a priority to the institution and ensures that it appears in the college’s strategic plan; the vice president, who must lead the charge to change rules and procedures in academic standards and/or staffing patterns; fiscal leadership, who must reconcile the fiscal benefits of scaling innovations with immediate budget concerns; faculty and deans, who must facilitate the logistics of change (classes, schedules, faculty loads, etc.); and faculty, whose creativity and commitment are critical to the success of an initiative and who invariably are asked to give additional uncompensated time to move the innovation forward.

Having accomplished all of this, the key criterion for determining whether or not a practice has achieved scale is the number of students served by the practice in relationship to the potential number of students who would benefit from the strategy. As the Lumina project came to a close, FRCC’s goal was to enroll 0 percent of students who tested at the highest level of developmental English into a developmental English/college-level course pairing. Procedural issues had been resolved, the courses were gaining in reputation with faculty and students, the cost benefit analysis was positive and there was support for the strategy at all levels of leadership. Despite this, the movement toward scaling stalled as grant funds ended, state funding continued to decline, and FTE soared.

The first fiscal impact was the elimination of the case manager, the staff member who advised students on the expectations and pace of the learning community; assisted students with logistical issues, such as financial aid; and followed up on instructor referrals of students who were struggling with academic or non-academic issues. The loss of the case manager position coincided with a drop in course completion rates, which program staff felt was a direct result of the elimination of the position. 31
The second fiscal impact was a hiatus in program expansion. As of this writing, the instructional costs of continuing the paired learning communities (one credit hour per instructor per learning community) continue to be supported by the General Fund, but the goal of reaching scale has receded into the background. Going forward, it is not clear how long FRCC will sustain the additional per-student cost of paired-learning communities, even with clear evidence of the strategy’s ability to deliver a lower cost per outcome and higher per student revenue over time.

The trajectory of the FRCC learning community initiative is a familiar one in the annals of grant-funded efforts. A program begins with grant funding, achieves success and remains a feature of the college, but at a limited scale. This is what is often spoken of as a “boutique program,” the connotation being that it is both expensive and limited in the number of students served. Often times, the colleges that pilot these strategies will continue them after the grant has ended for a particular segment of the population, such as first generation students. In other cases, a college will expand the program to all students because of a passionate belief in the program’s importance to the college mission. In these cases, going to scale means that colleges must find other ways to support program costs by re-allocating general funds or by securing external funding, a process that continues from grant cycle to grant cycle.

CCD’s innovations made greater progress in reaching scale than those of FRCC, partially because of a succession of grants that gave the college time to develop leadership, support professional development, expand the program, and collect longitudinal data on its cost effectiveness, which bolstered the case for institutionalization. Another difference between FRCC’s and CCD’s progress in reaching scale was the relative expense of FRCC’s paired learning communities as compared with CCD’s compressed learning communities.
Paired learning communities, which are team taught, incur one third more instructional costs than the costs of delivering classes in a traditional format, without generating additional revenue. By comparison, compressed courses, which are taught by one instructor, incur some additional instructional costs, but at the same time, they garner more revenue from tuition and FTE reimbursement than traditional instruction. The reason for this lies in the efficiency of compression, which allows students to master material in less “seat time” than traditional formats. Because FS students pay tuition based on the number of credit hours, while FS instructors are paid based on a mix of credit hours and instructional time, the program-wide net result is cost neutral.\textsuperscript{32}

As CCD expands the number of paired learning communities in an effort to serve more students, the question is whether the college will continue to support the short-term costs of these paired learning communities, even with the evidence of stronger student outcomes and higher revenues per student over the long term.

\textit{Dissemination as a Tool for Replication Across Colleges}

As difficult as it is to reach scale within an institution, the challenge of replicating, or scaling across institutions, is even more difficult. One of the lessons of the Colorado Lumina project was that innovations that are developed by a single college in a consortium are not easily replicated across colleges without intentional strategies that promote replication.

The Lumina initiative structured multiple opportunities for cross-college communication as part of its three-college project design, including quarterly project director meetings, presentations to the CCCS Council of Vice Presidents of Instruction, and a statewide basic skills summit to highlight best practices developed over the course of the initiative. Despite this, the
only replication of successful strategies from one college to another was CCD’s adoption of the FRCC developmental English/college level pairings.

The implicit expectation that dissemination will lead to replication does not bear out in reality. While dissemination plays an important role in informing the field, the reliance on dissemination as a means of replication is based on the assumption that conference presentations, forums, summits, reports, and briefs will lead to a replication of best practices. This assumption ignores the difficulty of translating what appears to work in one context to a different context, particularly when pilots are developed and implemented with generous grant funds.

While dissemination is an important part of introducing new ideas, hearing or reading about successful innovation does not translate into the ability to successfully implement practices. An awareness of the limitations of dissemination practices is becoming a more significant part of the dialogue on scaling innovation. Several new strategies that address the challenge of replication and scale are beginning to emerge in multi-college efforts, including practitioner-based technical assistance, peer coaching, and web-based collaboration.

*Let a Thousand Flowers Bloom*

Another example of the challenges of replication can be seen in how the individual colleges in the Lumina initiative responded to the CCCS request to design and implement two-year remedial math pilots. During the development period, there was no formal attempt and minimal informal effort to draw on the lessons of the Lumina project. Competition between colleges may have played a role in the “go it alone” approach, but another likely factor is the commonly held college belief that what will work in one college is different from what will work at another college, fueling the result that is sometimes referred to as, “Let a thousand flowers
bloom.” While this approach honors the differences in college contexts and allows colleges to choose the most effective way to implement a strategy in their specific setting, the dissimilarity between strategies impacts the evaluator’s ability to identify the common elements of effective practice, which is a critical element in successful replication.

The Challenge of Maintaining the Fidelity of the Model

Ensuring the fidelity of the program is another challenge in scaling/replication. College cultures vary widely, from the way departments are organized, to the strength of leadership, to beliefs about how students learn, to the ability of faculty and staff to learn new ways of thinking about how to efficiently and effectively serve students. All of these differences play out when a college attempts to replicate a practice that was developed in a context that differs from its own. The challenge of context was evident in the Ready for College initiative, where seven colleges committed to replicate the College Connection bridge program. The variation in the ways that the program was implemented— which was driven by the different capacities, overall goals, and cultures of the different colleges— was significant. While the collective student outcomes for the project were impressive, there was considerable variation in outcomes, with the strongest outcomes posted by those programs that exhibited the greatest fidelity to the model.  

Strengthening the Impact of Evaluation

Evaluation is a critical tool in identifying effective practice, but issues of institutional research capacity and the time frame of the evaluation cycle present serious challenges. Even in cases where there are adequate resources for a rigorous evaluation, the duration of most grants is not long enough to collect the longitudinal data needed for anything but a preliminary assessment.
of an innovation’s effectiveness. In addition, once the formal lines of communication between grantor and grantee no longer exist, and even assuming that a college has the capacity to continue to collect and analyze data, there is no central vehicle to capture the continuation of the quantitative and qualitative lessons learned. The granting agency has moved on to the next initiative, with all but the most prominent and well-publicized innovations receding into the landscape. There is no repository for continued evidence. Grant funds are no longer available to send innovators to conference where they can interact with colleagues. In terms of ongoing impact, the innovations and the lessons that have been learned from them have ceased to exist.

Achieving Scale and Sustainability

Perhaps the most difficult aspect of reaching scale is sustainability. In their discussion of scale, Christina and Nicholson-Goodman define sustainability as “policy and infrastructure systems that support continued improvement and impact over time.” These include the internal sets of policies and procedures that support or inhibit the scaling of initiatives, as well as the legislative policies that determine governance, funding, and accountability.

The interplay of the three statewide initiatives highlights the power of parallel and coordinated efforts in policy and practice. The Ford Bridges project played a significant role in the development of innovations for academically underprepared students. It aided the system in leveraging Lumina funding; helped make the public case for the importance of community colleges to the economic wellbeing of the state; connected remedial success to college completion; and contributed resources to the longitudinal tracking system, thereby strengthening the capacity of the system to make data-driven decisions. While the Lumina and OVAE initiatives provided the content, Bridges influenced the policy climate and supported the
development of strategic tools that brought a modicum of recognition to the initiatives in the short term and the possibility that they will have an impact on the system and national discourse over the long term.

As important as policy is in supporting innovation, the development of policy without the reality check of experiences on the ground poses a threat to the potential of innovation to lead to systemic change. If there is a danger in bottom-up efforts not moving beyond a particular institution, there is an equal danger in policy-driven efforts that fail to include the expertise of educators in the development of policy.

Colleges differ from one another in critical ways; in their governance, in their funding, in their internal organization, in their leadership; and in the populations that they serve. The importance of policy in promoting systemic change cannot be underestimated. At the same time, ignoring the importance of context in the wake of the rush to embrace new strategies is a perilous course of action. New considerations in the field of social innovation urge foundations to “lead boldly” and approach complex problems through “adaptive leadership,” or “the activity to mobilizing people to tackle the toughest problems and do the adaptive work necessary to achieve progress.”

Imposing top-down solutions to the challenges of postsecondary attainment, without engaging the field, is likely to lead to wasted opportunities and a new round of recriminations that could sour the public, the government, and the foundation community on the ability of community colleges to fulfill the multiple missions of educating and training the nation’s citizens.
Conclusions and Recommendations

The experience of the three Colorado initiatives points to a series of changes designed to support the scaling of innovations: changes in policies and procedures at the institutional level; changes in state and federal policy; changes in the way that grants and other initiatives are structured; and changes in the ways that we approach and support the replication of successful practice.

Policy Changes

There are two broad categories of policy change: the regulatory and administrative policies that create barriers to efficient functioning at the institutional level, and funding formulas that determine how state funds are awarded. Streamlining the labyrinth of administrative policies that govern community colleges is a necessary step in a broad change agenda, but the key driver of institutional policy and ultimately of college practices is how community colleges are funded.

The broad challenge of assuring sustained and adequate funding stream for higher education is beyond the scope of this paper, but changes in funding formulas that govern how colleges are financed is central to the challenges of innovation and scale. “What is measured is what is rewarded” is a basic tenet of organizational theory. The way in which we fund colleges—based on rewarding credit hours, without regard to student outcomes—creates a disincentive for colleges to do anything other than maximize enrollment and reduce operating costs. Gregory Bateson, a pioneer in systems theory, described an organization’s capacity for change as its “budget of flexibility,” defined as the uncommitted resources of an organization. From this perspective, the uncommitted resources of community colleges are scant, resting often on the creativity and commitment of its faculty and staff. Without incentives that reward
innovation it is difficult to see where innovations will come from, let alone be sustained, no matter how small the short-term costs or how strong the evidence that the strategies in question would yield higher outcomes.

Accountability and costs drive community college policy. Cost-per-outcome over time has little meaning if the benefit is in the future and the fiscal crisis is in the present. Increased revenue over time is not a strong argument for scaling innovation in a period of over-enrollment and cost containment. In this environment, the policy driver is the ability to generate the maximum revenue at the lowest cost in the shortest amount of time.

**Recommendation:** Create a system of incentive funding that shifts the focus from enrollment to outcomes, with attention to ensure that any formula that rewards outcomes does not create pressure that would work against the inclusion of hard-to-serve populations.

**Grant Structure**

The traditional structure of grants does not support replication or scalability. Defined grant periods, even when accompanied by efforts in dissemination, do not allow for an adequate time frame for the collection of longitudinal data, or adequate mechanisms to facilitate replication.

**Recommendation:** Grants should be structured in two tiers; the first tier as an implementation period of two to three years, followed by a three-year period of reduced funding. During the first time frame the primary grantee would focus on implementation, after which the grantee would serve as a coach to another college or group of colleges. The two-tier structure would include an initial period of funding, focusing on the primary grantee, followed by a two-year period of time in which the primary grantee would receive reduced funding to continue data
collection and expansion, while the mentee colleges would receive the bulk of funds to support implementation at their campuses. Colleges, departments, and programs need to “opt-in” to replication efforts and agree to basic elements that will ensure the fidelity of the replication.

A second recommendation is to establish a central collection point for ongoing findings that would be readily available to practitioners and researchers.

Scaling Innovation

Traditional means of replication do not provide the type of guidance that is necessary to promote scale. Top-down mandates for change that are prescriptive in approach, without a consideration of the local context, are likely to be met with resistance by professionals, while bottom-up strategies are difficult to both evaluate and replicate.

**Recommendation:** Create networks of practitioner-based technical assistance that incorporate on-site coaching and web-based collaboration. Coaching should include all levels of the institution that contribute to the success of an innovation: leadership, staff, faculty, institutional research, technology, and the delivery of student services.

Community colleges are at an important juncture in their development, moving front and center in efforts to create the workforce of the future. At the same time, the current rate of certificate and degree attainment in community colleges is insufficient to staff the workforce of the future. Innovation is one key to pioneering systemic solutions to this conundrum, but innovation alone will not foster systemic change. Innovation must be accompanied by changes that facilitate the widespread adoption of successful practice. The political will to provide adequate and sustained funding is part of the equation to meet the goals of the completion agenda. Another is the
commitment of the philanthropic community and public agencies to work collaboratively with the field to support and maximize the promise and practice of innovation.
This brief was written from the perspective of a participant-observer. The author was the Principal Investigator of the Colorado Lumina Initiative for Performance, a member of the Ford Foundation’s Colorado Bridges team, designer and initial Project Director of the CCCS, “Ready for College” initiative and co-developer and director of FastStart@CCD.


College Completion Challenge Call to Action American Association of Community Colleges (2010). Available online at http://www.aacc.nche.edu/About/Pages/calltoaction.aspx.


Community College Bridges to Opportunity Initiative, Ford Foundation: Project Description (June 2003).


To address the long term for sustained funding the governors’ Higher Education Strategic Planning Group identified a number of potential revenue generating strategies that could create a sustained funding source for higher education, including restoring the income and sales tax rates to 5.0% and 3.0%, respectively; expanding sales tax to specific services; implementing a 1.0% surcharge on extraction, implementing a statewide 4.0% mill levy; and implementing a 4.0% mill levy in counties where an institution of higher education is located.


Kristin Corash and S. Jackson, “Cost-Benefit Analysis of Front Range Community College Learning Communities” Internal report to the Colorado Lumina Initiative for Performance (December 2007).

Debra Bragg, *Ready for College in Colorado Evaluation of the Colorado and the College Connection Program* (Champaign, IL: University of Illinois, Office of Community College Research and Leadership, 2010).


CCD was awarded a total of $330,000 over the course of five years as part of *Breaking Through and Taking Care*, joint projects of the National Council of Workforce education and Jobs for the Future, funded by the Charles Stewart Mott (2006-2009) and Bill and Melinda Gates Foundations (2010).

*Breaking Through* was a four-year project of the National Council of Workforce Education and Jobs for the Future, funded by the Charles Stewart Mott Foundation.

Debra Bragg, *Ready for College in Colorado Evaluation of the Colorado and the College Connection Program* (Champaign, IL: University of Illinois, Office of Community College Research and Leadership, 2010).

Phone interview with Shanna Jan, Chair of Developmental English, Front Range Community College, Larimer Campus and Director of the Front Range Community College Lumina Initiative (December 13, 2010).

In some course combinations, such as the compressed combination of medium/advanced levels in developmental English and reading, students pay for nine credit hours of instruction, while instructors are paid the equivalent of seven credit hours. In the case of the compressed sequence that combines the low/medium levels of developmental math, students pay for five credits, while instructors are paid the equivalent of six credits.

Debra Bragg, *Ready for College in Colorado Evaluation of the Colorado and the College Connection Program* (Champaign, IL: University of Illinois, Office of Community College Research and Leadership, 2010).


This chapter aims to first summarize the basic facts about remediation—the students who need it, how it is organized, and how much it costs. Then, I will discuss the major debates surrounding remediation before reviewing the research on what is known about the effects of remediation on student outcomes. Finally, the chapter will consider how to make remediation work based on current research on reforming and improving remediation programs. Overall, the chapter addresses how reforming remediation might facilitate the national goal to increase degree attainment.

Basic Facts About Remediation

The Students

During the 20th century, the increased demand for higher education by students from all backgrounds accelerated the need for remediation in higher education. According to a 1996 study by NCES, by 1995, 81 percent of public four-year colleges and 100 percent of two-year colleges offered remediation. The increasing numbers of students entering colleges unprepared for college-level material is reflected in the growing numbers required to take remedial courses. According to a 1997 NCES study, 39 percent of colleges surveyed reported that remedial enrollments had increased during the last five years. Other colleges choose to expel rather than educate students with severe academic deficiencies. For instance, during the fall of 2001, the California State University system “kicked out more than 2,200 students—nearly 7 percent of the freshman class—for failing to master basic English and math skills.”

The first major group of students in remedial education is under-prepared recent high school graduates, many of whom exit secondary school without grade-level competency or the proper preparation for college-level material. The need for remediation in college is closely tied
to a student’s high school curriculum. A 2002 study by the Ohio Board of Regents found that students who had completed an academic core curriculum in high school were half as likely to need remediation in college compared to students without this core.  

Similarly, studies by Cliff Adelman emphasize the importance of academic preparation in high school for success in college. However, completion of a high school core curriculum does not ensure that a student will avoid remediation in college. Many students who complete upper-level math courses in high school still require math remediation courses or need to repeat subjects in college. The need for students who are supposedly “academically prepared” to take remediation suggests that the problem is larger than just poor high school course selection or the lack of a college-prep curriculum at some schools. High school rigor is certainly a concern. Additionally, misalignment between the material defined as necessary by high schools and the competencies colleges require has been well documented.

In addition to recent high school graduates, a substantial number of adult students enroll in developmental courses. Many of these workers were displaced by structural shifts in the labor market and seek developmental courses to acquire the skills necessary for re-employment. Others are often recent immigrants or welfare recipients. Nationally, about 27 percent of remedial students were over the age of 30.

The purpose of remedial education in most college systems is to provide under-prepared students the skills necessary to complete and succeed in college. In addition, remediation may serve several institutional needs. First, it allows colleges to offer access to growing numbers of students. It also provides individual departments the ability to generate enrollment, particularly
in English and Math departments. Moreover, by separating weaker students into remedial courses, remediation allows colleges to protect institutional selectivity, regulate entry to upper level courses, and maintain the research functions of the college. Finally, remediation may serve as a tool to integrate students into the school population.\textsuperscript{11} The bulk of remediation is provided by non-selective public institutions, the point of entry for 80 percent of four-year students and virtually all two-year students. At some colleges, remedial courses are offered institution-wide while others have the courses housed in individual departments. Another option for institutions and states is to outsource the remediation. Maryland and New York allowed some experimentation with the contracting of private vendors, such as companies like Kaplan and Sylvan, but the outsourcing market has changed from teaching classes to instead offering software and other teaching aids for remedial education.\textsuperscript{12}

Because the average college student attends a nonselective institution to which he or she is almost assured admission, the remediation placement exam taken when first arriving on campus has become the key academic gate-keeper to postsecondary study. As Kirst notes, since admission is virtually certain, students' first hurdle is their placement test. Nationally, the most widely used placement exams are the Computerized Adaptive Placement Assessment and Support Systems (COMPASS) and the Assessment of Skills for Successful Entry and Transfer (ASSET), each published by the ACT, Inc., and the ACCUPLACER, developed by the College Board. The tests consist of a variety of items that measure students’ skill level. For example, the ASSET exam is a written test with as many as 12 subsections, including in-depth assessment of students’ writing, numerical, and reading skills. While most students are identified using placement exams in reading, writing, and mathematics, some schools also use standardized test scores and high school transcripts to make assignments. After taking the placement exam,
colleges assign students to a specific math course, oftentimes a remedial course, based on their scores. Typically, administrators make these designations based on “hard” cutoffs—students scoring below a given threshold are assigned to a remedial course.

Placement into math remediation is more common than placement into English (i.e. reading and/or writing) remediation, but participation in English remediation may be more serious as some evidence suggests that reading and writing deficiencies have more negative effects on a student’s success. Remedial courses are often the gateway for students to enroll in upper level courses. About two-thirds of campuses nationally restrict enrollment in some classes until remediation is complete, and most schools prohibit students from taking college-level courses in the same subject area until remediation is complete. Some go even farther by barring students from taking any college-level work while enrolled in remediation. This requirement may restrict students’ class schedules, and to the extent that remediation affects the classes that students can take, it may also discourage students from focusing on certain majors. For example, some majors are extremely demanding in terms of required credit hours and have little leeway for students to enroll in non-required classes. A student in remediation may have to take one or two semesters worth of preparatory classes before they start the courses for a major. On the one hand, this rigidity may just increase the time to graduation; however, it could also discourage certain majors. While most colleges and universities offer academic credit for remedial courses, most do not allow remedial credits to count toward degree completion. Campuses also vary in the extent to which they require versus suggest that under-prepared students enroll in remedial or developmental work.
The Costs of Remediation

The true total cost of remediation is unknown, but some national estimates suggest an annual cost of over $2 billion. In 2006, the Alliance for Excellent Education concluded that the cost of remediation was $2.8 billion, half of this in the form of direct costs and half in terms of what the nation loses in terms of lost earning potential due to remedial students being more likely to drop out of college without a degree. The lack of a clear number is due to the fact that most states have little data from which to give accurate assessments. However, a few states have studied this issue. Ohio provides a more detailed case study of the costs of providing remediation in one state. In 2000, Ohio public colleges spent approximately $15 million teaching 260,000 credit hours of high school-level courses to freshman; another $8.4 million was spent on older students. These figures only take into account state subsidies as Ohio offers instructional subsidies for courses granting academic credit. However, there are additional costs associated with items such as tuition expenditures, financial aid resources, and lost wages are not included in this estimate. The cost of remediation for the 20,000 freshman in the state amounted to an additional $15 million in tuition.

Texas also provides estimates of the cost of remediation at its public higher education institutions. The Texas legislature appropriated $206 million in general revenue funds for the instructional costs of developmental education, not including private colleges and universities. The cost per semester credit hour varied by institution type. The Legislative Budget Board found that the average cost per credit hour was $256 at Texas public universities, $152 at Texas public community colleges, and $189 at Texas State Technical Colleges. Along with the direct costs of remediation, a 2005 study by Hammons estimates that Texas loses over $13.6 billion annually
in lower earnings potential, poor worker productivity, and increased spending on social programs.\textsuperscript{18}

While remediation is expensive, it may be relatively less expensive to provide than other college courses. According to a 1998 study by the Arkansas Department of Higher Education, remedial education is less costly than or approximately the same as core academic programs. An analysis of expenditure data in 1996-97 found that the direct and indirect costs per full-time equivalent (FTE) student were $7,381 for remediation at four-year colleges and $6,709 at two-year colleges.\textsuperscript{19} In comparison, the cost of core programs ranged from $7,919 to $12,369 at the four-year colleges and $6,163 to $8,235 at the two-year colleges. The two primary reasons for the cost differences were larger class sizes and the higher prevalence of adjunct, lower-paid instructors in remedial courses.\textsuperscript{20} Price Waterhouse found similar results examining the CUNY system during 1996-97, which spent $124 million on remediation that year. The cost of remediation courses was approximately one-third less than the cost of other academic courses. Two-thirds of the costs for remediation were covered by tuition and student aid with city and state funding providing for the rest.\textsuperscript{21}

While the expense associated with remediation is quite high, the social costs of not offering remediation, however, are likely to be much larger than the institutional costs of the programs. Unskilled individuals have expenses associated with them such as unemployment costs, government dependency, crime, and incarceration. Moreover, the increasing demands of the economy for more skilled workers encourages the nation to find an effective way to train its workers.
The Policy Debates

Given the significant costs of remediation, and the fact that many view the courses as double payment for skills that should have been obtained in high school, states and higher education institutions continually question whether they should cover any or all of the costs of remedial education. In their consideration of reform, however, many policy makers have focused on reducing costs rather than searching for ways to improve remedial programs. Some states have decided to limit where remediation can happen or how much students can take. This section outlines some of the major policy debates and decisions.

Where Should Remediation Happen?

One major question is who should offer remedial courses. Nearly every state has taken the responsibility to offer some kind of remediation. However, they differ in which public institutions offer the courses. While many offer remedial courses at either their two- and four-year institutions, an increasing number limit the classes to only their two-year institutions. Even among former groups, three states have some limitation imposed concerning remediation at the four-year institutions. These decisions are partly justified by the lower cost of offering courses at community colleges.

Although Florida was the first state to limit remediation at public colleges and universities to the two-year schools in 1985 (with the exception of historically black colleges), this type of policy shift has been much more visible in recent years. In particular, New York's decision to phase out most remedial education within the City University of New York's (CUNY) four-year system in 1999 generated a great deal of debate and press. Starting in 1999, students had to go through a two-step admissions process. First, they may be granted provisional
admission based on high school grades and other non-test measures. Then, the student must demonstrate “skills proficiency” with SAT scores or Regents test scores. Students who are unable to pass this second hurdle and require remediation are not accepted until they complete the remedial work at a community college and pass the CUNY/ACT Basic Skills Tests.23

More recently, states like Arizona, Florida, Montana, South Carolina, and Virginia have all decided to prohibit their in-state public universities from offering remediation education. For example, Virginia law charges that the community colleges should handle remedial education. Four-year public institutions therefore are expected to make arrangements with community colleges to handle the remediation of students accepted for admission. Private colleges are not affected by this requirement.24 In North Carolina, the state legislature passed a law in 2001 (which was amended in 2003) that restricted schools within the University of North Carolina (UNC) system to offer remedial education.25 Instead, institutions were instructed to refer students to other schools to complete their remedial coursework. Since 1992, schools within the UNC system had been allowed to enter into contracts with community colleges and others have been encouraged to do so “when it improves the cost effectiveness or educational value of remedial coursework.”26

California is another state that has moved towards concentrating remediation in the community college system. The UC system does not officially offer remedial instruction, although some UC campuses have contracted or folded their remedial classes into regular courses.27 However, the CSU system did offer remediation without limitations until plans were passed in 1996 with the intent of reducing the number of incoming students in need of remediation to less than ten percent.28 Although the original goal was to begin denying admission to a CSU campus to students who needed remedial courses in 2001, the plan was
quickly revised with a 2007 target instead. Since initiating the plan, CSU has done several things to reduce the need for remedial education. For example, they offer more summer remedial education programs, have tried to strengthen teacher preparation, and are attempting to set clearer standards and communicate them to students, parents, and schools to ensure that graduates meet university admission requirements. The goal is to require recent high-school graduates to demonstrate college-level skills in English and mathematics as a condition of admission. This is part of a larger effort in California to encourage students to complete their remediation at two-year colleges before entering the four-year system. Other states continue to debate the possible benefits of limiting remediation at public institutions to the two-year colleges.

With all the movement away from four-year institutions offering remediation, an important question is what effects restricting remedial services to community colleges will have on student outcomes. By shifting the locus of remediation, states could change enrollment patterns, and eventual degree completion could fall as a result: research suggests community college students do not perform as well as similar students who initially enter four-year institutions, perhaps due to a lack of resources.

**Should States Limit or Shift the Costs of Remediation?**

There are other kinds of limitations that states and institutions could impose on the provision of remediation. Some states limit the percentage of students who need remedial courses that can be accepted by an institution. Other states and institutions impose limits on the amount of time students have to complete the remediation or the number of times a student can
repeat a remedial course. Similar to limitations on where remedial courses are offered, these types of limitation could also have important implications for students.

Massachusetts is an example of a state that has chosen to limit the number of students who have remedial needs who can be admitted to a public university. In a 1998 report, the Massachusetts Board of Higher Education voiced the opinion that developmental education should be a primary function of the two-year public college and not the four-year institutions. Therefore, they imposed a five percent cap on the enrollment of freshmen in remedial courses. The cap increased to ten percent, but students above that percentage are referred to community colleges. Similarly, in Georgia, there has been some movement towards reducing the number of students in remediation, particularly within the University of Georgia system.

Some institutions and states impose time limits. For example, Texas limits both the amount of development credits that students can take and how many levels of remediation can be offered by an institution. The Texas Success Initiative states that legislative appropriations may not be used for developmental coursework taken by a student in excess of “(1) 1 semester credit hours, for a general academic teaching institution; and (2) 27 semester credit hours, for a public junior college, public technical institute, or public state college.” Other states limit the number of remedial courses that can be taken. For example, at California community colleges, there is a limit of 30 semester or 45 quarter credits of “precollegiate basic skills” courses, except for ESL students or those with “verified learning disabilities.” In Georgia, students who do not meet the minimum standards for college-level work within the University of Georgia system are placed into Learning Support classes. However, only a maximum of 12 semester hours, or three semesters (whichever occurs first), may be taken in any area. If students do not meet this requirement, they are suspended for three years, pending an appeal.
Another way states and university systems limit remediation is to not allow students to repeat remedial courses if they do not pass the first time. In Florida, for instance, in 1997, the state legislature imposed a penalty on students who enroll more than once in a remedial course. According to analysis by the Division of Community Colleges, this resulted in significantly reducing the percentage of students who retook courses. SB 1974, passed in 1999, amended the law to increase the number of times state funding would support students repeating a course to two. The current policy is that students pay the regular tuition price for the first two attempts of a remedial course. However, they must pay the full costs of instruction if they need to take the class a third time; these costs are four times the regular tuition amount.\textsuperscript{38}

Efforts to limit remediation, either in where it is offered or how much is allowed, could have the effect of pressuring high school students to prepare better for college while pushing programs and college students to be more effective with their time. However, such effects are unlikely due to poor information among students, and importantly, the lack of clear evidence on how to build a successful remediation program. Therefore, while policy makers lament the problem of remediation, many of the efforts described above do little to reduce remediation rates or improve programs. Instead of moving forward the conversation on how to “fix” remediation, the policies being debated are orthogonal to the research and practice focused on identifying strategies to make remediation more effective.

\textbf{The Impact of Remediation: Does It Work?}

\textit{Basic Comparisons of Remedial and Non-remedial Students}

Remedial classes are designed to address academic deficiencies and prepare students for subsequent college success. They may improve student persistence by teaching material not yet
mastered. In comparison, students with similar concerns who are not in remediation may never gain a sufficient academic foundation and be more likely to drop out. Remedial courses may also provide a safe environment in which students receive other kinds of support that could increase their chances of degree completion. However, there are several reasons why remedial courses may in fact have the opposite effect. By increasing the number of requirements and extending the time to a credential, remediation may lower the likelihood of degree completion. The literature also suggests that the stigma associated with remediation may also negatively impact students. Remedial courses may also be filled with negative peer effects. In contrast, similar students not placed into remediation could benefit from positive peers effects by interacting with higher-ability students in non-remedial classes.39

While the use of remedial courses by postsecondary institutions is widespread, states and colleges know little about whether their remediation programs are successful along any dimension. Few states have exit standards for remedial courses and only a small percentage performed any systematic evaluation of their programs. One major problem has been a lack of good data, and studies that have been able to overcome the information barrier often focus on one particular institution. Moreover, most of the research on remediation simply compares students in remediation to those not in the courses. Not surprisingly, these studies find remedial students, who have less preparation, are less likely to succeed than their peers. Because students who are placed in remedial courses differ from those who are not placed into remediation, one would expect these students to be less likely to persist and complete a degree even in the absence of remediation. Therefore, one must develop a way to separate the effects of lower preparation from the effects of being placed in a remedial course. Moreover, placement in remediation might differ due to college choice, i.e. a student wishing to avoid remediation might choose a college
with a very low placement cutoff. Placement also differs by socio-economic status as more wealthy students are more likely to retake remediation exams in order to have additional chances of passing out of the courses.  

Does Remediation Work for Those on the Margin of Needing the Courses?

The recent availability of new data sources has prompted several large-scale studies that attempt to address these selection problems to get to an apples-to-apples comparison of students placed in remediation to similar students not in the courses. Bettinger and Long, in 2005 and 2009 studies, use an instrumental variable strategy that combines between-college variation in remediation placement policies and the importance of distance in college choice to estimate the causal effect of remedial courses on higher education outcomes in Ohio. This sort of comparison is possible in that state because institutional policies regarding remediation differ across the public colleges and universities. Therefore, two students with the same characteristics face dissimilar probabilities of remediation if they attend different schools. The analysis focuses on degree-seeking, traditional-age, full-time undergraduates who initially entered a public college in fall 1998. Their results suggest that remedial students at Ohio colleges are more likely to persist in college and to complete a bachelor’s degree in comparison to students with similar test scores and backgrounds who were not required to take the courses. These results support the assertion that remediation is a way to improve the chances of degree completion.

Another way to research the effects of remediation is to use a regression discontinuity methodology. Assuming that students who score just above and below the placement cutoff have near similar ability, especially due to the noise inherent in such tests, one can obtain a causal estimate of the effects of remedial placement on subsequent outcomes for those students at the
margins of passing. Calcagno and Long, in a 2008 study, use this strategy to examine the effects of remediation in Florida. The results suggest that remediation might promote early persistence in college, but it does not necessarily help community college students make long term progress towards a degree. The impacts for math and reading remediation were positive in terms of total credits earned but no statistically significant difference was found in terms of total college-level (non-remedial) credits earned. Martorell and McFarlin, in a 2009 study, use a similar method to examine the impact of remediation in Texas. They also find that remediation had little effect on persistence and degree completion, along with a range of other educational outcomes. In addition, they find no effect on labor market earnings. Generally, their estimates are small and statistically insignificant.

The conflicting results from these studies suggest that the causal effects of remedial courses on student outcomes are mixed at best for students at the margin of passing out of remediation. However, it is puzzling that the estimated effects range so much. One reason for the differences across studies could be variation in where states locate the cutoff for placement into remediation. Another possible explanation is that each study focused on different student populations. Calcagno and Long included nearly the entire universe of first-time, degree-seeking students in Florida. Meanwhile, Bettinger and Long focused on traditional-age college students at two- and four-year public institutions, and Martorell and McFarlin limit their analysis to students who took all three placement exams (math, reading, and writing) and passed the writing section. Many educational interventions have had varying effects on students of different genders, races, and other demographic characteristics, and so it is plausible, as discussed below, that remedial courses could also have varying effects on different kinds of students.
Additional work by Long and Calcagno focusing on Florida indeed finds that the effects of remediation differ by student background and demographics. Women experienced more positive effects from placement into remediation than men. This finding could relate to other differences documented by gender such as learning styles, levels of engagement, or amount of study time, and this may give clues as to why remediation works for some but not others. However, the gender difference is also consistent with many other studies that have found women and girls to be more positively influenced by interventions. Women also have higher degree completion rates, but it is unclear whether remediation plays any role in this difference. It is also curious that women assigned to developmental courses failed to earn more non-remedial credits than their female counterparts not assigned, thereby suggesting again that remediation does not have an overall positive effect.

Another interesting pattern is the fact that older students placed into remediation realized more positive effects in a host of outcomes in comparison to younger students in remediation. This result could suggest that the outlook of the student is important to the potential impact of being assigned to developmental courses. If older students are more focused or ready to take advantage of “refresher” courses or the opportunity to “catch up,” then this could explain the differences in the results. It could also be the case that older students have a greater need for developmental courses because they have been out of high school for a longer period. Therefore, older students who score high enough to just barely pass out of remediation might benefit from taking the courses regardless of placement status.

Income level also appears to be related to the effectiveness of remediation. Pell Grant recipients in remediation experienced more negative outcomes in terms of persistence,
Associate’s degree completion, transfer rates, and credits earned. Because income is often highly correlated with high school quality, the underlying cause of these differences may be preparation. However, it may also be the case that affordability interacts with performance in remediation and afterwards. While these low-income students receive the Pell Grant, usually it does not cover the full costs of their educations. The patterns suggest that there should be further investigation of the interaction of financial need and experiences within and after remediation.

How Do the Effects Differ by Level of Prior Preparation?

The aforementioned studies were limited to focusing on students just on the margin of needing the courses, and so little is known about the effects of remediation on students with much lower levels of preparation. Research by Boatman and Long expands the literature by examining the impact of remedial and developmental courses on the academic outcomes of students with varying preparation levels. They focus on students who began at a public college or university in Tennessee in fall 2000. Due to the state’s multi-tiered system in which students could be assigned into one of four levels of math and one of three levels of reading or writing (i.e., remedial, developmental, or college-level courses), they are able to examine the effects of multiple levels of remediation, from students who need only one course to those who need several courses.

The results suggest that remedial and developmental courses do differ in their impact by the level of student preparation. Similar to some of the above studies, the largest negative effects were found for students on the margin of needing remediation: in comparison to their peers placed in college-level courses, students assigned to remedial courses were less likely to complete a college degree in six years. However, at the other end of the academic ability
spectrum, the negative effects of remediation were much smaller and sometimes positive. In the writing courses, Boatman and Long found positive effects for those placed in lower level courses. For example, students in the lowest levels of remedial writing persisted through college and attained a degree at higher rates than their peers in the next highest level course. These results suggest the effects of remediation do differ by preparation level, and more, rather than less, remediation could be beneficial for students with weaker preparation. This study, along with others, also suggests that writing (or English) remediation has more positive effects than math remediation.  

What Else Do We Need to Know?

The existing research suggests that the effects of remediation are far more nuanced than a single effect experienced by all students. In essence, remedial and developmental courses appear to help or hinder students differently by state, institution, background, and level of academic preparedness. Therefore, states and schools need not treat remediation as a singular policy but instead should consider it as an intervention that might vary in its impact according to student needs. The results also present an interesting puzzle about why remedial and developmental courses have such different effects. Understanding the reasons for the differences could spur some insight into how to make all developmental and remedial courses effective. The often negative effects found for students at the margin of needing remediation may also suggest that remediation is not needed for as many students as currently placed. On the other hand, with low levels of persistence and degree completion at many colleges, institutions need to find better ways to support the academic needs of their students. It may also be the case that some colleges and universities are more successful than others in helping underprepared students due to
differences in how they offer and teach their remedial and developmental courses. Future research needs to take a more critical look to identify which institutions do the best job.

**Making Remediation Work**

The research on remediation and how to improve it is still in its infancy. Still, there are many hypotheses about how to make remediation work. There are also some promising interventions currently being implemented that could provide direction. Some focus on figuring out ways to improve instruction, give students additional supports, or accelerate the process so students are not delayed from accumulating college credits. This section considers these strategies and programs.

**What Are the Best Practices for Colleges and Universities?**

While the above results give a general sense of the impact of remediation, it may be the case that certain types of instruction and supports are more beneficial than others. Research is needed to identify which practices are the most effective in remediation programs. The literature highlights factors that might matter in the success of a remediation program. These factors include clearly specified goals and objects, a high degree of structure, the provision of counseling and tutoring components, and the use of a variety of approaches and methods in instruction. A more recent review of the literature confirms that little rigorous research exists to document best practices in remedial or developmental education. However, the authors conclude that the most promising strategies are to help students build their skills in high school, integrate remedial students into college-level courses, and provide opportunities for the
development of skills for the workforce. However, far more work is needed to compare the relative effectiveness of different models of delivery.

One place current reformers has focused is on the placement process itself. There is a lack of consensus of what it means to be prepared for college-level work, and as such, there are differing views of what would necessitate placing a student in a remedial or developmental course. Even when there seems to be agreement about what skills are needed for higher education, translating those benchmarks into assessments has resulted in a variety of tools. As noted above, states vary a great deal in the types of instruments used and cutoffs imposed to determine placement into remediation. It may be the case that remedial courses are more or less effective for certain parts of the testing distribution, and so the placement of the cutoff could be an important determinant of the impact of the courses.

In a 2005 report, Prince summarizes arguments for more standardized and consistent testing instruments and cutoff scores. He asserts that policies that are “more consistent and predictable” would help to “establish a common definition of academic proficiency which could accelerate the alignment of secondary and postsecondary academic requirements and expectations and enable colleges to send clear signals to high schools about the preparation students need to be college-ready.” In addition, he argues that doing so would improve states’ ability to track and evaluate their programs. Having a mandatory policy might also help facilitate transfer as students would be able to avoid duplication and arbitrary placement if moving to another institution in the state. However, even if standardization is preferred, it is not clear which assessment(s) should be used and where the threshold for remediation should be drawn.
Other avenues for reform include how instructors are used, including adjunct faculty, and professional development for instructors.\textsuperscript{53} One reason remedial courses tend to be less costly than college-level classes is that the inputs are cheaper: adjunct instructors are more likely to be used than full-time faculty, and class sizes have been larger. However, some research suggests that students who have adjuncts as instructors do worse in terms of educational outcomes. Moreover, larger class sizes, especially for students with academic needs who have already had past trouble engaging with material, could be detrimental to progress. Some institutions are thinking much more deliberately about how remedial courses are offered and conducted, in terms of instruction, pedagogy, format, and size.

\textit{Using Learning Communities in Remedial Courses}

One possible model that may be beneficial in a remediation program is learning communities. In learning communities, students are organized into cohorts that take paired remedial and academic courses, such as a remedial writing course linked with an entry-level psychology course. In 2002, the National Survey of First-Year Academic Practices found that 62 percent of responding colleges enrolled at least some cohorts of students into a learning community, although most of these programs involved only a small portion of students.\textsuperscript{54} The use of learning communities is currently one of the fastest growing and most prominent approaches to remediation.

Proponents of learning communities suggest several reasons why this approach may be more effective than traditional models of teaching in helping students with low basic skill levels. Linking a course like remedial English with a course in a student’s major may make the material more engaging and motivate the student to work harder. Students in learning communities are
challenged to view course material from different perspectives, thereby building critical thinking skills and deepening their understanding of it. Finally, students in learning communities have the opportunity to form deeper ties with their peers and with faculty, thereby strengthening their support networks and their attachment to the institution.

Despite widespread enthusiasm for the learning community model, research analyzing its effectiveness as an instruction model is remarkably thin, as indeed is research on remediation in general. Vincent Tinto, in 1997 and 1998 studies, found positive results at LaGuardia Community College and Seattle Central Community College by comparing students who voluntarily enrolled in learning communities to students who did not. More recently, MDRC conducted a random assignment evaluation of a learning communities program at Kingsborough Community College in Brooklyn as part of its Opening Doors Demonstration. They have found: “relative to a control group of students in regular classes, students in the learning community moved more quickly through developmental English requirements, took and passed more courses, and earned more credits in their first semester.” However, the evidence was much more mixed on whether the program increased college persistence. According to the MDRC report, “Initially the program did not change the rate at which students reenrolled. In the last semester of the report’s two-year follow-up period, however, slightly more program group members than control group members attended college.” Further evaluation is needed to determine their effects on academic achievement and persistence, particularly for students entering college with low basic skills.
Redesigning Remediation Courses: The Tennessee Example

Other institutions have tried much more drastic changes to their remedial offerings. In the fall of 2007, the Tennessee Board of Regents implemented a redesign of remediation at four of the public college campuses using grants from the National Center for Academic Transformation (NCAT). During the 2008-09 academic year, the state began piloting redesigns in six community colleges of their instructional approaches with the goal of allowing students to spend less time in remedial courses. At these institutions, remedial courses are taught using technology to enable students to work at their own pace and focus attention on the particular skills in which they are deficient. These courses are tailored much more to students’ specific needs and academic deficiencies. Administrators and policy makers are optimistic that these types of changes could greatly improve student learning and long-term outcomes. However, current evaluations simply report the remedial pass rates and test scores of students before course redesign and after, not accounting for the selection of students into these courses and differences that may have occurred over time. Therefore, much more research is needed to determine whether this is a promising, cost-effective way to improve remediation. Moreover, previous research has only looked at a very limited list of outcomes. However, the pilots were found to improve course completion rates (as measured by a final grade of C or better), as well as reduce their instructional costs on average by 36 percent. The Tennessee Board of Regents is expanding its redesigns for developmental courses, and by 2013 all its community colleges must have in place programs that have technology as an integral part and must focus on helping students master their remedial subjects at their own pace.
Avoiding the Need for Remediation

Another tactic some states and institutions are taking is to try to avoid the need for remediation altogether through the use of early placement testing. Such programs administer remediation placement exams to high school students in order to provide them with early signals that they may lack competencies critical to success in a postsecondary institution. Most often this is done during the 10th or 11th grade year. The tests are designed to improve the information high school students have regarding their preparation for college and encourage those who fall short to take additional coursework in their senior year. With their teachers, counselors, and parents, students can then determine what courses to take while still in high school in order to avoid college remediation. With costs considerably less than college remediation, early placement testing programs may be a much more affordable way to address the problem of preparation for some students; Ohio estimates the cost of improving a student one-level higher in college math using an early testing program is $17.58

The earliest example of early placement testing took place in Ohio in 1978. It began as an experimental program between one high school in Columbus and an Ohio State University math professor. Today, the Early Mathematics Placement Testing program is supported by the Ohio Board of Regents, with funding from the Ohio legislature. It remains closely tied to the Ohio State University math department, although all Ohio state-supported, four-year universities and some two-year and private colleges have been incorporated into the program. On the other hand, there is little connection with K-12 systems, and participation by high schools is voluntary, limited, and fluctuates from year to year. For example, between the 2003-04 and 2004-05 school years, participation fell from 261 to 231 high schools.59 Still, an evaluation of the Ohio program found that participation in the Early Mathematics Placement Testing program had a significant
effect on mathematics placement at the college level; the evaluation further concluded that the program effectively reduced remediation. Students who participated in EMPT were more likely to place higher in math upon entering Ohio State University and less likely to require remediation. Since 197, at least 12 states have followed Ohio’s example and implemented similar programs.

In California, the Early Assessment Program (EAP) provides high school juniors with information about their academic readiness for coursework at California State University campuses. One study examined the effects of the program as offered in spring 2004. Fifteen optional multiple choice questions were added to each of the mandatory California Standards Tests in 11th grade English and mathematics. Students who opted to complete those questions then received a letter the summer before senior year denoting their performance level and advice about what courses to take in their senior year. They were also directed to additional resources to improve their readiness for college coursework. In an evaluation of the program, Jessica Howell, Michal Kurlaender, and Eric Grodsky find that “participation in the Early Assessment Program reduces the average student’s probability of needing remediation at California State University by 6.1 percentage points in English and 4.1 percentage points in mathematics.” They conclude that EAP increased students’ academic preparation in high school and did not discourage poorly prepared students from applying. This suggests such programs have promise in reducing the need for remediation, but the framing of the information given to students is important.
Conclusion

For the last several decades, the United States has focused on increasing access to higher education, with the promise of substantial private benefits for the individual and public benefits for society. The reality is that many students seeking the benefits of a college degree are not academically prepared for college-level coursework. Remediation has grown to address this gap, allowing for the continued expansion of college access with the hope of giving students the foundational skills necessary to persist to degree completion. However, it is questionable whether remediation is currently living up to that hope, as the little research available gives mixed estimates on whether remediation is working at all. There are also many unanswered questions about how, and, more importantly, why the effects of remediation differ across students and institutions. For the 30 to 40 percent of first-year students who are placed in the courses, remediation can serve to delay college credit accumulation and prolong the pathway to completion. Many never complete their remedial coursework, thereby ending their pursuit of a postsecondary credential. “Fixing” remediation by identifying and developing better ways to conduct the courses is therefore essential to increasing educational attainment.

Of course, as the main gateway to college-level courses, especially given the fact that most students attend non-selective institutions, remediation is a significant cost to taxpayers, institutions, and students. Debates about limiting or restricting remediation are therefore understandable, but they can be counterproductive to the goal of increasing degree attainment. As noted in a Time magazine article, eliminating remediation in higher education could “effectively end the American experiment with mass postsecondary education.” The low levels of academic preparation inherited by higher education are certainly a challenge, but solutions need to be found to address the problem if the country is serious about raising graduation rates.
With half of students completing their college degrees, to increase in degree completion, we must figure out ways to address the needs and concerns of the bottom half of the distribution, most of whom are placed into remediation. By helping students gain the skills they need to succeed in college-level courses using the most cost- and time-effective methods, improved models of remediation could contribute significantly to the nation’s goals of increasing educational attainment.
Jay Greene and Greg Foster, “Public High School Graduation and College Readiness Rates in the United States” (Manhattan Institute, Center for Civic Information, Education Working Paper, no. 3, September 2003) define being minimally college ready as (1) graduating from high school, (2) having taken four years of English, three years of math, and two years of science, social science, and foreign language, and (3) demonstrating basic literacy skills by scoring at least 265 on the reading National Assessment of Educational Progress.

In this paper, I refer to all types of below-college-level courses as remedial or developmental. This includes “basic-skills training” and “nontraditional coursework” as other names for developmental or remedial courses. I acknowledge that different areas of the country and stakeholders may have other preferred names.


Ohio Board of Regents, “The Preparedness of Recent High School Graduates Entering Ohio’s State-Supported Colleges and Universities.” Ohio’s High School Students go to College: Profile of Student Outcomes and Experiences. (Columbus, OH: Ohio Board of Regents, 2002).


For example, 25 percent of Ohio high school graduates with a known core curriculum required remediation in either math or English. See Ohio Board of Regents, "Planning the Transition from High School to College in Ohio" (Columbus, O.H.: Ohio Board of Regents, 2002).

See Robert H. McCabe, “Developmental Education: A Policy Primer,” League for Innovation in the Community College, 14, no. 1 (February 2001); Andrea Venezia, Michael Kirst, and Anthony Antonio, Betraying the College Dream: How Disconnected K-12 and Postsecondary Education Systems Undermine Student Aspirations (Stanford, CA: Stanford Institute for Higher Education Research, 2003) also detail how the standards for high school courses are entirely different from those for college classes.


By 2006, these companies had stopped providing most of their services. Some of the problems cited by a former Sylvan executive that led to them eliminating that part of their business include the long length of time it took for colleges to decide whether to hire the company and opposition from faculty members who disliked the idea of outsourcing teaching duties. See Goldie Blumenstyk, “For-profit education: Facing the challenges of slower growth,” Chronicle of Higher Education 52, no 18, A13, 2006.


16 Ohio Board of Regents, *Ohio Colleges and Universities Student Outcomes, Experiences and Campus Measures* (Columbus, O.H.: Ohio Board of Regents, 2001).


19 Because these figures include indirect costs such as libraries, registration, and plant maintenance, they should not be used to determine the savings associated with eliminating remediation.


22 It is important to distinguish between the remedial costs of recent high school graduates versus nontraditional college students, including adult learners and immigrants. While critics blame the K-12 system for the remediation of its recent graduates and suggest high schools should contribute to the costs associated with these students, most treat older students returning to higher education to upgrade their skills as a separate category.


36 Judith James, Victoria Morrow, and Patrick Perry, Study Session on Basic Skills: A Presentation to the Board of Regents, California Community Colleges, July 2002.

37 University of Georgia, “Academic Affairs Handbook: Section 2.9.1 Administrative Procedures for Learning Support Programs.” Available online at http://www.usg.edu/academic_affairs_handbook/section2/handbook/2.9_learning_support/.


42 The authors focus on students who were age 18 to 20 when they initially began college. Also, to get data on past student preparation and performance, they limit the sample to students who took the ACT. This is not a strong restriction given testing patterns among the group indicating they want to complete a degree.

43 Additionally, Bettinger and Long found that community college students placed in math remediation were 15 percent more likely to transfer to a four-year college and to take ten more credit hours than students with similar test scores and high school preparation.


45 The authors also address concerns about noncompliance, or the fact that some students choose not to follow the placement rules by taking the recommended level of course (remedial or college-level), as well as concerns about endogenous sorting around the policy cutoff, which is due to the fact that some students retook the placement exam multiple times until they passed the cutoff.

46 More specifically, students on the margin of requiring math remediation were slightly more likely to persist to their second year than their non-remedial peers, but the likelihood of passing subsequent college-level English composition was slightly lower for remedial students.

47 During their focal time period, the state had a single placement exam and cutoff score.
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50 This was also found by Bettinger and Long (2009).


53 Zachry and Schneider, (2010).


57 Initially redesign efforts were planned at six colleges in Tennessee, but two colleges did not have successful implementation of the redesign efforts.

58 Ohio Early Mathematics Placement Testing Program at The Ohio State University, 2003.

59 Data requested from Early Mathematics Placement Testing by the author on historical participation by high school; received January 23, 2006.


61 Ohio Early Mathematics Placement Testing available online at www.empt.org.


The Challenge of Scaling Successful Policy Innovations: A Case Study of Three Colorado Community College System Grants

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The collected papers for this conference can be found at www.aei.org/event/100346.
Introduction

There is a heated dialogue in the U.S. today around the importance of postsecondary education and training to the economic future of the country. The conversation is by no means a new one, but it is one that has taken on a new sense of urgency in light of the skills needed to compete in the global economy and the alarmingly low rates of completion in higher education. While other countries are increasing the educational level of their citizens, the United States is losing ground. Only 37 percent of U.S. adults aged 25-64 have an associate’s degree or higher, as compared with 55 percent of adults in the best performing countries. In addition, 2007 data on college completion show that only 30 percent of students seeking an associate’s degree earned the credential within three years.

A number of prominent foundations, as well as the current administration, have responded to the challenge of low educational attainment by setting ambitious goals, such as doubling the numbers of certificates and degrees by 2025 or increasing the level of high quality college degrees and credentials to 60 percent by 2025. The articulation of these goals is stimulating a renewed interest within the philanthropic community on how to effectively promote and support systemic change.

The phrase “initiative fatigue” has recently surfaced in these conversations, reflecting the frustration of many in the reform community with the failure of grant-funded efforts to translate into a systemic adoption of successful innovations. Initiative fatigue is a worrisome term for the leadership and innovators of community colleges, coming as it does amidst the heavy focus on the low completion rates of community colleges students, the limited resources to support change, and the heavy pressures being brought to bear by state and national policy makers to double the numbers of certificates and degrees by 2025.
This case study of reform efforts in Colorado addresses the question of why efforts to scale-up successful, small-scale, grant-funded community college innovations and replicate them across institutions and across states have largely been unsuccessful. To answer this question, we examine the trajectory of three grants awarded to the Colorado Community College System (CCCS) from 2004-2010: the *Colorado Lumina Initiative for Performance: Costs and Strategies for Serving Academically Underprepared Students;* the Ford Foundation’s *Community College Bridges to Opportunity Project,* creating career pathways for low-income adults; and a U.S. Department of Education, Office of Adult and Vocational Education (OVAE) “*Ready for College*” grant, supporting successful transitions to postsecondary education for out-of-school youth and recent high school graduates.

In this brief, I identify a series of challenges community colleges face in their efforts to bring successful innovations to scale, including state funding formulas; the logistical and cultural barriers of scaling within an institution; the lack of effective mechanisms to bring innovations to scale across institutions; the dysfunction of grant timelines; the challenge of maintaining the fidelity of the model; and the absence of a system to track outcomes after a grant cycle has ended. The overarching issues are the critical role that accountability and funding plays in supporting innovation, the necessity to rethink how grants are structured, and the importance of blending authority, leadership, and local expertise in efforts to scale effective practice.

The brief begins with an overview of the context for the reform effort. It proceeds with a description of the initiatives and a review of their achievements, and continues with a discussion of how the experiences of these initiatives can inform our understanding of the challenges of scale. It concludes with recommendations on policy, changes in grant structure, and strategies for replication.
The Context

Profile of the Colorado Community College System (CCCS)

The CCCS is a highly centralized system of 13 community colleges, serving 38 percent of all Colorado resident undergraduates and 45 percent of the state’s minority undergraduates. In 2008-2009, CCCS served over 117,000 students, 26 percent of whom were classified as minorities and 41 percent of whom were certified as Pell eligible. One-year certificates accounted for 40 percent of degrees awarded in 2008-2009, two-year certificates accounted for 13 percent, and Associate of Applied Science (AAS) accounted for 22 percent of degrees awarded. Associate of General Studies (AGS), Associate of Arts (AA), and Associate of Science (AS) degrees, which are transfer-oriented, accounted for the remaining 25 percent. The three-year transfer rate for first-time students in the fall 2005 cohort (2005-2008) was 15.6 percent, with 89 percent of transfer students entering four-year institutions. Of CCCS transfers, 82 percent were part-time students and 18 percent were full-time students. The overall three-year graduation rate in 2009 was 22.5 percent; the minority graduate rate was 17.4 percent.

The Colorado Paradox

Although Colorado ranks sixth in the percentage of the adult population with a postsecondary degree, its high ranking is a product of the immigration of individuals attracted by growth in the job market in those industries that require postsecondary degrees and the state’s quality of life. In contrast, the state ranks 46th in the postsecondary degree attainment of its native-born population. The disparity between the educational levels of the general population and the native-born population—termed the “Colorado Paradox”—was elevated to a key educational policy issue in Governor Ritter’s administration (2006-2010); however, the resulting
legislation focused almost exclusively on K-12 reforms, with only minimal attention given to improvements in postsecondary education.

The Remedial Challenge

The lack of academic preparation of incoming students is a troublesome characteristic of community college students, both nationally and in Colorado. Remedial course enrollments comprised 21 percent of CCCS’s total student headcount in 2009, with 64 percent of incoming students testing into at least one remedial course and 16 percent into all three remedial subjects: mathematics, English, and reading. Remedial need is more pronounced in urban regions with high minority populations and struggling school districts than in suburban ones. At Community College of Denver (CCD), which serves the metro Denver region, 30 percent of first-time students tested into all three remedial areas, nearly twice the rate of the overall CCCS population.

CCCS remedial students are also more heavily minority, female, and younger than the overall student population, characteristics that are associated with lower rates of college completion. The high numbers and the demographic profiles of recent high school graduates who test into remedial courses is disconcerting, not only for what it says about high school academic rigor, but also for what it portends for student retention and attainment. Fall-to-fall retention for first-time students who tested into remedial courses in 2008-2009 was 45.5 percent, five percentage points below the 50.7 percent retention rate of students who tested into college-level work.
Fiscal and Policy Climate

Since fiscal year 1989-90, state support for higher education in Colorado has decreased from 20.3 percent to 9 percent of the state General Fund. Relative to other state services, the higher education share of state General Fund has been reduced by 55 percent. Significant funding cuts to higher education, beginning in fiscal year 2001-2002, were largely a product of the recession of the late nineties, in conjunction with two constitutional amendments that constrained spending. The Taxpayer Bill of Rights (TABOR) limited the collection of state revenue over the amount collected in the previous fiscal year, in those years when revenues grew faster than the rate of inflation and population growth. Amendment 23 mandated an annual increase in funding for K-12 equal to the rate of inflation plus one percent, a measure designed to help restore K-12 funding, which had suffered severe cuts as a consequence of the TABOR amendment.

Spending cuts to higher education became more pronounced as discretionary spending fell in the wake of the recession. Community colleges saw a 35.3 percent reduction in General Fund Appropriations in FY 2004-05, dropping from $3,565 per resident FTE in 2001-02 to $2,306 per resident full-time equivalent (FTE) in 2004-05. A 28 percent increase in tuition and a variety of cost saving measures, such as administrative cuts, greater reliance on adjunct faculty, and reduction in student services were put in place to counter the impact on services from reduced General Fund revenue, but the positive effects of these measures were offset by an 18 percent increase in enrollment during the same period, adding new stresses to the already strained capacity of the CCCS.

Some respite from the negative fiscal impact of the two conflicting spending mandates came with the 2006 passage of Amendment C. The measure, which was supported by a broad
coalition of business, education, and government, including Republican Governor Bill Owens, placed a five-year moratorium on TABOR. But the attempt to slow the precipitous decline in revenues took place before the latest and more pronounced recession, which portends serious financial consequences for CCCS in the years ahead. A modicum of relief came from the American Reinvestment and Recovery Act (ARRA) and from a state constitutional amendment which directed a portion of gaming proceeds to community colleges. Despite these efforts to restore funding, 2010 FTE funding for community colleges stands at the 1993 level, at a little over $2,000 per resident FTE, with another precipitous drop anticipated with the sunset of ARRA funds in 2012.

In the 2010 legislative session, Governor Bill Ritter, looking ahead to the pending shortfall in higher education funding, signed a bill that gives institutions of higher education the authority to raise tuition above the legislatively mandated 9 percent cap, subject to the approval of financial accountability plans that, among other requirements, assure protection for low and middle income students.\textsuperscript{13}

**The Three Initiatives**

*A Focus on Academically Under-prepared Youth and Adults*

Beginning in 2004, there was a growing awareness of the importance of postsecondary education to the state’s economic future; along with a recognition of the critical role that remediation plays in the rates of postsecondary attainment. This awareness was strengthened, if not precipitated, by the system’s participation in three national initiatives. The discussion that follows looks at the development and interplay of these initiatives from the perspective of
implementation, the scaling of successful innovations within and across colleges, and the role of policy in efforts to sustain successful innovations for high-risk populations.

The Ford Foundation’s Community College Bridges to Opportunity Initiative

In 2004, Colorado was selected to participate in the Ford Foundation’s Community College Bridges to Opportunity project (Bridges), a five-year, six-state initiative focused on creating community college and career pathways for disadvantaged students. Participating states were awarded $100,000-$200,000 per year along with technical assistance to support efforts in the grant’s four focus areas: integration of the workforce and academic missions of the colleges, strengthening stakeholder engagement to support colleges, the increased use of data to inform decision making, and efforts to support policy innovations that would lead to systemic changes in how community colleges provide education and training to low-income adults.

Bridges had a modest impact on the development of career pathways through input and refinements to the Career and Technical Education division of the system, but it had other significant impacts: by shaping a communication strategy that helped position community colleges as engines of economic development and as the road to opportunity for individuals; by raising the awareness of the inter-relationship of remediation and low educational attainment through a series of high-profile reports; by funding the development of a longitudinal tracking system that contributed to the capacity for data-driven decision making at the college, system, and state policy levels; and by supporting the development of a cost/benefit analysis that gave colleges a tool to evaluate the cost-effectiveness of different innovations.

The broad communication strategy developed by the initiative helped garner public support for two state legislative measures that averted the likely closure of several community
colleges through potentially catastrophic revenue cuts. In addition to communicating the importance of community colleges to the general public, Bridges resources contributed to a series of annual reports by the CCCS Office of Institutional Research highlighting the remedial needs of the state adult and student populations and the implications of low degree attainment to the state’s economic future.\textsuperscript{14} While the reports themselves did not lead to immediate legislative or system-level changes, they were instrumental in focusing attention on a problem that had been largely ignored and prompted the State Board of Community Colleges to request additional data and recommendations from the CCCS on ways to improve remedial outcomes.

Resources from the project also contributed to the development of the CCCS longitudinal tracking system, which gave the Institutional Research office the capacity to do a more detailed analysis of student progression through the remedial sequence. The first study using the cohort tracking system focused attention on the dismal completion rates of remedial math students, results that were similar to those reported around the same time in the Community College Research Center’s (CCRC) longitudinal tracking of Achieving the Dream remedial math cohorts.\textsuperscript{15} The impact of these discouraging remedial math outcomes, alongside a national study with similar results, was a wake-up call to the CCCS Board and to the system.

While the report did not result in immediate action, it laid the groundwork for significant policy changes over time. By 2010, improving remedial outcomes was included as a goal in the CCCS strategic plan; the remedial agenda was included in the Colorado Department of Higher Education (CDHE) recommendations to the governor, and concrete and coordinated efforts to improve remedial instruction in the colleges became an active part of the CCCS agenda.\textsuperscript{16} In spring 2010, the math chairs of each of the thirteen CCCS colleges met with the system provost to discuss the issues generated by the longitudinal remedial math study. As a follow-up to the
meeting, each college was asked to design a two-year pilot that would lead to improvement in the college’s remedial math outcomes. A formative evaluation of the first year implementation of the remedial math pilots is currently underway.

Bridges resources also funded the refinement and development of a simplified student unit cost/benefit template that could be used by college staff to evaluate the fiscal implications of grant-funded innovations. The template calculated the break-even point and projected revenues of different strategies, based on the retention rates and course taking patterns of students in intervention and matched comparison groups. The tool was used in internal evaluations of strategies developed under the Lumina grant, as detailed below, was included as a resource in the Bridges website—Community College Central—and was shared as part of 2010 webinar sponsored by the Joyce Foundation’s *Shifting Gears* project.

*The Colorado Lumina Initiative for Performance*

The program officers leading the Bridges initiative, John Coburn and Cyrus Driver, understood the importance of leveraged funding and encouraged the CCCS to apply for a Lumina Foundation grant to meet the Bridges objective of “developing models of effective institutional classroom and administrative practices for use by policy makers, college administrators and advocacy coalitions.” *The Colorado Lumina Initiative for Performance: Costs and Strategies for Serving Academically Under-prepared Students* began in 2004 with a $650,000 grant for two years, followed by a two-year supplemental grant of $324,000. Yearly grants to the three participating colleges ranged from $30,000 to $86,000, based on the scope of the colleges’ projects. The objective of the initiative was to support the development and
implementation of innovation at the college level and to calculate the cost-effectiveness of
different grant-funded strategies for serving academically underprepared students. 19

The initiative was structured primarily as a bottom-up effort, with college teams choosing
the strategies they would implement, based on an internal assessment of their practices in
relationship to evidence-based practices. 20 Through assessment, each college determined its own
needs, resources, and capacity and identified strategies based on the assessment. Ongoing data
collection was used to evaluate and adapt programmatic design. At the end of the first year of
implementation, all three colleges had evaluated and adapted their initial strategies based on
student and faculty feedback.

Front Range Community College’s (FRCC) initial strategies included a hybrid
accelerated developmental education format, with one class session delivered on campus and
two class sessions delivered on-line; and two learning community formats, one that paired
developmental English and math with a college-level sociology course and another that paired
developmental English with a single college-level course. Students in both formats were
supported by a dedicated case manager that monitored students’ progress and assisted students in
negotiating college processes and accessing support services.

At the end of three semesters, an evaluation by the college’s Office of Institutional
Research showed strong preliminary outcomes for the two learning community interventions.
Students in both formats had a 45.7 percent higher successful course completion rate than
students in the comparison group as well as a higher semester GPA. The learning community
that paired developmental English with a single college-level course had stronger outcomes than
the three-course pairing, posting a 33.4 percent higher retention rate than the comparison
group. 21
The student unit cost-benefit analysis of the paired developmental English/college-level strategy showed net revenue from higher retention rates, on an average per-student basis of $408 over four terms. Based on preliminary student outcomes, feedback from faculty and staff and the positive revenue outlook provided by the cost-benefit analysis, FRCC began expanding developmental English/college-level pairings and began shifting project costs to the General Fund. Further expansion and ongoing general fund support continued in the third year of the grant. The strategy was replicated at two additional FRCC campuses and new paired learning communities were added. Student numbers increased from an initial population of twenty students a semester to over two hundred students a semester.

Community College of Denver implemented two strategies; an English as a Second Language (ESL) learning community that combined three stand-alone ESL courses in reading, writing, and speaking in a block format; and an accelerated developmental learning community, FastStart@CCD (FS), which compressed two or more levels of developmental courses into a single semester. As with the Bridges initiative, both formats utilized an educational case manager to recruit, screen, and support students, and to monitor student progress. The FS strategy included study groups, faculty professional development, and a mandatory student success course. In addition to the traditional topics in a student success course, such as study skills, time management, and balancing work and family, the FS student success course was organized around career exploration and guidance, culminating in the selection of a college major.

An analysis of student outcomes in the initial ESL cohort after the first semester showed that students in the intervention posted significantly higher retention and course completion rates than students in a matched comparison. Application of the cost/benefit analysis showed an
average per student net revenue of $472 at scale after two terms, with the project reaching the break-even point in the first semester. Net per student revenue after two semesters was $912.\textsuperscript{25} Armed with the preliminary evidence of positive student outcomes and positive revenue projections, program staff successfully advocated for institutionalization of ESL Learning Communities using the college’s strategic planning process. The program was fully institutionalized in 2009 with the transition of the ESL case manager from grant funds to the General Fund. From 2007-2010, the number of ESL learners increased fivefold.

The second CCD strategy, FastStart@CCD, implemented a form of acceleration called “compression”, which combines two or more levels of developmental courses in a single semester. First semester FS outcomes showed a significantly higher course completion rate (47 percent versus 24 percent) and a 50 percent higher semester-to-semester retention rate for students who took accelerated pairings in English, reading, and mathematics, as compared to students in a matched comparison taking a single course in the traditional format.\textsuperscript{26}

In addition to breaking even in the first term, the program generated an average additional per student net revenue of $460 after two terms, which was calculated by comparing the retention rates and course taking patterns of the intervention and a matched comparison. The cumulative average per student net revenue after two terms was $912, with a subsequent analysis over nine terms showing an average per student net revenue of $1,898.\textsuperscript{27} Based on strong outcomes and positive revenue projections, the college began transitioning the costs of coordination and case management, the two primary costs of FS services, from grant funds to the General Fund. Continued development and expansion from 2006-2010 was provided through two additional grants, \textit{Breaking Through} and \textit{Scaling Up}.\textsuperscript{28}
From 2005 to 2010, FS added six new course combinations, including pairings of developmental courses with college level courses. The number of classes and number of students doubled in each of the last three semesters, expanding from a single cohort of 22 students in the first semester to twenty-six learning community cohorts with an enrollment of over 600 students in spring 2011. Two educational case managers provide student support with the help of three work-study students. Coaching to maintain program quality during rapid expansion and curriculum development for new course pairings continues to be funded through a combination of grant carryover and support from the college’s Teaching and Learning Center.

**Colorado SUN: The U.S. Department of Education, Office of Vocational and Adult Education (OVAE) Ready for College Initiative**

In 2007, OVAE awarded an $875,000 two-year grant to the CCCS under its Ready for College initiative. The project, called *Colorado Success Unlimited* (*Colorado SUN*) centered on the provision of transition services to GED completers and out-of-school youth at seven community colleges. The program design replicated CCD’s successful bridge program, *College Connection*, piloted in 2007 under the college’s *Breaking Through* grant. The *College Connection* model incorporated the key components of FS: accelerated learning communities, case management, career exploration, and professional development. In the second year of *Colorado SUN*, *College Connection* was offered in a credit-bearing format, which allowed students to qualify for Pell grants and colleges to generate FTE. The program was offered by some colleges in a summer bridge format. Other colleges offered it during the first half of the traditional semester, giving students the opportunity to enroll in late start classes in the second half of the semester.
A preliminary evaluation of the project showed strong outcomes for *Colorado SUN*’s *Ready for College* (RFC) learners: 65 percent of RFC students advanced one or two adult education levels in developmental math, 60 percent in developmental reading, and 47 percent in developmental English. Enrollment in college-level courses was high, with 80.3 percent of RFC learners enrolling in college-level courses, earning an average of 10 college credits. With the grant only recently ended, it is too early to know the extent to which College Connection will be scaled. At least two colleges are continuing the program, while others are adopting program components. A second outgrowth of *College SUN* is a joint project of two CCCS colleges and partnering workforce centers supporting the successful transition of students referred by the workforce to postsecondary education. The project, called the *College Career Navigation Initiative*, is administered by the CCCS and funded through a Department of Labor incentive grant.

Taken together, the Ford, Lumina, and OVAE grants generated a series of positive outcomes. They elevated the public perception of community colleges and helped the system focus on developing and implementing creative new approaches to serve traditionally underserved students. The grants also increased the capacity of the system and colleges to measure outcomes and financed the development of a data-driven means to demonstrate the financial viability of innovations to fiscal-oriented decision-makers.

**Discussion**

*Achieving Scale at the Institutional Level*

Despite these early successes, many barriers remain to full-scale adoption and implementation of these strategies. Scaling within an institution requires support from the
critical ranks of all levels of leadership, beginning with the president, who identifies an innovation as a priority to the institution and ensures that it appears in the college’s strategic plan; the vice president, who must lead the charge to change rules and procedures in academic standards and/or staffing patterns; fiscal leadership, who must reconcile the fiscal benefits of scaling innovations with immediate budget concerns; faculty and deans, who must facilitate the logistics of change (classes, schedules, faculty loads, etc.); and faculty, whose creativity and commitment are critical to the success of an initiative and who invariably are asked to give additional uncompensated time to move the innovation forward.

Having accomplished all of this, the key criterion for determining whether or not a practice has achieved scale is the number of students served by the practice in relationship to the potential number of students who would benefit from the strategy. As the Lumina project came to a close, FRCC’s goal was to enroll 80 percent of students who tested at the highest level of developmental English into a developmental English/college-level course pairing. Procedural issues had been resolved, the courses were gaining in reputation with faculty and students, the cost benefit analysis was positive and there was support for the strategy at all levels of leadership. Despite this, the movement toward scaling stalled as grant funds ended, state funding continued to decline, and FTE soared.

The first fiscal impact was the elimination of the case manager, the staff member who advised students on the expectations and pace of the learning community; assisted students with logistical issues, such as financial aid; and followed up on instructor referrals of students who were struggling with academic or non-academic issues. The loss of the case manager position coincided with a drop in course completion rates, which program staff felt was a direct result of the elimination of the position. 31
The second fiscal impact was a hiatus in program expansion. As of this writing, the instructional costs of continuing the paired learning communities (one credit hour per instructor per learning community) continue to be supported by the General Fund, but the goal of reaching scale has receded into the background. Going forward, it is not clear how long FRCC will sustain the additional per-student cost of paired-learning communities, even with clear evidence of the strategy’s ability to deliver a lower cost per outcome and higher per student revenue over time.

The trajectory of the FRCC learning community initiative is a familiar one in the annals of grant-funded efforts. A program begins with grant funding, achieves success and remains a feature of the college, but at a limited scale. This is what is often spoken of as a “boutique program,” the connotation being that it is both expensive and limited in the number of students served. Often times, the colleges that pilot these strategies will continue them after the grant has ended for a particular segment of the population, such as first generation students. In other cases, a college will expand the program to all students because of a passionate belief in the program’s importance to the college mission. In these cases, going to scale means that colleges must find other ways to support program costs by re-allocating general funds or by securing external funding, a process that continues from grant cycle to grant cycle.

CCD’s innovations made greater progress in reaching scale than those of FRCC, partially because of a succession of grants that gave the college time to develop leadership, support professional development, expand the program, and collect longitudinal data on its cost effectiveness, which bolstered the case for institutionalization. Another difference between FRCC’s and CCD’s progress in reaching scale was the relative expense of FRCC’s paired learning communities as compared with CCD’s compressed learning communities.
Paired learning communities, which are team taught, incur one third more instructional costs than the costs of delivering classes in a traditional format, without generating additional revenue. By comparison, compressed courses, which are taught by one instructor, incur some additional instructional costs, but at the same time, they garner more revenue from tuition and FTE reimbursement than traditional instruction. The reason for this lies in the efficiency of compression, which allows students to master material in less “seat time” than traditional formats. Because FS students pay tuition based on the number of credit hours, while FS instructors are paid based on a mix of credit hours and instructional time, the program-wide net result is cost neutral.\textsuperscript{32}

As CCD expands the number of paired learning communities in an effort to serve more students, the question is whether the college will continue to support the short-term costs of these paired learning communities, even with the evidence of stronger student outcomes and higher revenues per student over the long term.

\textit{Using Dissemination as a Tool for Replication Across Colleges}

As difficult as it is to reach scale within an institution, the challenge of replicating, or scaling across institutions, is even more difficult. One of the lessons of the Colorado Lumina project was that innovations that are developed by a single college in a consortium are not easily replicated across colleges without intentional strategies that promote replication.

The Lumina initiative structured multiple opportunities for cross-college communication as part of its three-college project design, including quarterly project director meetings, presentations to the CCCS Council of Vice Presidents of Instruction, and a statewide basic skills summit to highlight best practices developed over the course of the initiative. Despite this, the
only replication of successful strategies from one college to another was CCD’s adoption of the FRCC developmental English/college level pairings.

The implicit expectation that dissemination will lead to replication does not bear out in reality. While dissemination plays an important role in informing the field, the reliance on dissemination as a means of replication is based on the assumption that conference presentations, forums, summits, reports, and briefs will lead to a replication of best practices. This assumption ignores the difficulty of translating what appears to work in one context to a different context, particularly when pilots are developed and implemented with generous grant funds.

While dissemination is an important part of introducing new ideas, hearing or reading about successful innovation does not translate into the ability to successfully implement practices. An awareness of the limitations of dissemination practices is becoming a more significant part of the dialogue on scaling innovation. Several new strategies that address the challenge of replication and scale are beginning to emerge in multi-college efforts, including practitioner-based technical assistance, peer coaching, and web-based collaboration.

*Let a Thousand Flowers Bloom*

Another example of the challenges of replication can be seen in how the individual colleges in the Lumina initiative responded to the CCCS request to design and implement two-year remedial math pilots. During the development period, there was no formal attempt and minimal informal effort to draw on the lessons of the Lumina project. Competition between colleges may have played a role in the “go it alone” approach, but another likely factor is the commonly held college belief that what will work in one college is different from what will work at another college, fueling the result that is sometimes referred to as, “Let a thousand flowers
bloom.” While this approach honors the differences in college contexts and allows colleges to choose the most effective way to implement a strategy in their specific setting, the dissimilarity between strategies impacts the evaluator’s ability to identify the common elements of effective practice, which is a critical element in successful replication.

The Challenge of Maintaining the Fidelity of the Model

Ensuring the fidelity of the program is another challenge in scaling/replication. College cultures vary widely, from the way departments are organized, to the strength of leadership, to beliefs about how students learn, to the ability of faculty and staff to learn new ways of thinking about how to efficiently and effectively serve students. All of these differences play out when a college attempts to replicate a practice that was developed in a context that differs from its own. The challenge of context was evident in the Ready for College initiative, where seven colleges committed to replicate the College Connection bridge program. The variation in the ways that the program was implemented—which was driven by the different capacities, overall goals, and cultures of the different colleges—was significant. While the collective student outcomes for the project were impressive, there was considerable variation in outcomes, with the strongest outcomes posted by those programs that exhibited the greatest fidelity to the model.33

Strengthening the Impact of Evaluation

Evaluation is a critical tool in identifying effective practice, but issues of institutional research capacity and the time frame of the evaluation cycle present serious challenges. Even in cases where there are adequate resources for a rigorous evaluation, the duration of most grants is not long enough to collect the longitudinal data needed for anything but a preliminary assessment
of an innovation’s effectiveness. In addition, once the formal lines of communication between grantor and grantee no longer exist, and even assuming that a college has the capacity to continue to collect and analyze data, there is no central vehicle to capture the continuation of the quantitative and qualitative lessons learned. The granting agency has moved on to the next initiative, with all but the most prominent and well-publicized innovations receding into the landscape. There is no repository for continued evidence. Grant funds are no longer available to send innovators to conference where they can interact with colleagues. In terms of ongoing impact, the innovations and the lessons that have been learned from them have ceased to exist.

**Achieving Scale and Sustainability**

Perhaps the most difficult aspect of reaching scale is sustainability. In their discussion of scale, Christina and Nicholson-Goodman define sustainability as “policy and infrastructure systems that support continued improvement and impact over time.” These include the internal sets of policies and procedures that support or inhibit the scaling of initiatives, as well as the legislative policies that determine governance, funding, and accountability.

The interplay of the three statewide initiatives highlights the power of parallel and coordinated efforts in policy and practice. The Ford Bridges project played a significant role in the development of innovations for academically underprepared students. It aided the system in leveraging Lumina funding; helped make the public case for the importance of community colleges to the economic wellbeing of the state; connected remedial success to college completion; and contributed resources to the longitudinal tracking system, thereby strengthening the capacity of the system to make data-driven decisions. While the Lumina and OVAE initiatives provided the content, Bridges influenced the policy climate and supported the
development of strategic tools that brought a modicum of recognition to the initiatives in the short term and the possibility that they will have an impact on the system and national discourse over the long term.

As important as policy is in supporting innovation, the development of policy without the reality check of experiences on the ground poses a threat to the potential of innovation to lead to systemic change. If there is a danger in bottom-up efforts not moving beyond a particular institution, there is an equal danger in policy-driven efforts that fail to include the expertise of educators in the development of policy.

Colleges differ from one another in critical ways; in their governance, in their funding, in their internal organization, in their leadership; and in the populations that they serve. The importance of policy in promoting systemic change cannot be underestimated. At the same time, ignoring the importance of context in the wake of the rush to embrace new strategies is a perilous course of action. New considerations in the field of social innovation urge foundations to “lead boldly” and approach complex problems through “adaptive leadership,” or “the activity to mobilizing people to tackle the toughest problems and do the adaptive work necessary to achieve progress.” Imposing top-down solutions to the challenges of postsecondary attainment, without engaging the field, is likely to lead to wasted opportunities and a new round of recriminations that could sour the public, the government, and the foundation community on the ability of community colleges to fulfill the multiple missions of educating and training the nation’s citizens.
Conclusions and Recommendations

The experience of the three Colorado initiatives points to a series of changes designed to support the scaling of innovations: changes in policies and procedures at the institutional level; changes in state and federal policy; changes in the way that grants and other initiatives are structured; and changes in the ways that we approach and support the replication of successful practice.

Policy Changes

There are two broad categories of policy change: the regulatory and administrative policies that create barriers to efficient functioning at the institutional level, and funding formulas that determine how state funds are awarded. Streamlining the labyrinth of administrative policies that govern community colleges is a necessary step in a broad change agenda, but the key driver of institutional policy and ultimately of college practices is how community colleges are funded.

The broad challenge of assuring sustained and adequate funding stream for higher education is beyond the scope of this paper, but changes in funding formulas that govern how colleges are financed is central to the challenges of innovation and scale. “What is measured is what is rewarded” is a basic tenet of organizational theory. The way in which we fund colleges—based on rewarding credit hours, without regard to student outcomes—creates a disincentive for colleges to do anything other than maximize enrollment and reduce operating costs. Gregory Bateson, a pioneer in systems theory, described an organization’s capacity for change as its “budget of flexibility,” defined as the uncommitted resources of an organization. From this perspective, the uncommitted resources of community colleges are scant, resting often on the creativity and commitment of its faculty and staff. Without incentives that reward
innovation it is difficult to see where innovations will come from, let alone be sustained, no
matter how small the short-term costs or how strong the evidence that the strategies in question
would yield higher outcomes.

Accountability and costs drive community college policy. Cost-per-outcome over time
has little meaning if the benefit is in the future and the fiscal crisis is in the present. Increased
revenue over time is not a strong argument for scaling innovation in a period of over-enrollment
and cost containment. In this environment, the policy driver is the ability to generate the
maximum revenue at the lowest cost in the shortest amount of time.

**Recommendation:** Create a system of incentive funding that shifts the focus from
enrollment to outcomes, with attention to ensure that any formula that rewards outcomes does
not create pressure that would work against the inclusion of hard-to-serve populations.

*Grant Structure*

The traditional structure of grants does not support replication or scalability. Defined
grant periods, even when accompanied by efforts in dissemination, do not allow for an adequate
time frame for the collection of longitudinal data, or adequate mechanisms to facilitate
replication.

**Recommendation:** Grants should be structured in two tiers; the first tier as an
implementation period of two to three years, followed by a three-year period of reduced funding.
During the first time frame the primary grantee would focus on implementation, after which the
grantee would serve as a coach to another college or group of colleges. The two-tier structure
would include an initial period of funding, focusing on the primary grantee, followed by a two-
year period of time in which the primary grantee would receive reduced funding to continue data
collection and expansion, while the mentee colleges would receive the bulk of funds to support implementation at their campuses. Colleges, departments, and programs need to “opt-in” to replication efforts and agree to basic elements that will ensure the fidelity of the replication.

A second recommendation is to establish a central collection point for ongoing findings that would be readily available to practitioners and researchers.

Scaling Innovation

Traditional means of replication do not provide the type of guidance that is necessary to promote scale. Top-down mandates for change that are prescriptive in approach, without a consideration of the local context, are likely to be met with resistance by professionals, while bottom-up strategies are difficult to both evaluate and replicate.

**Recommendation:** Create networks of practitioner-based technical assistance that incorporate on-site coaching and web-based collaboration. Coaching should include all levels of the institution that contribute to the success of an innovation: leadership, staff, faculty, institutional research, technology, and the delivery of student services.

Community colleges are at an important juncture in their development, moving front and center in efforts to create the workforce of the future. At the same time, the current rate of certificate and degree attainment in community colleges is insufficient to staff the workforce of the future. Innovation is one key to pioneering systemic solutions to this conundrum, but innovation alone will not foster systemic change. Innovation must be accompanied by changes that facilitate the widespread adoption of successful practice. The political will to provide adequate and sustained funding is part of the equation to meet the goals of the completion agenda. Another is the
commitment of the philanthropic community and public agencies to work collaboratively with the field to support and maximize the promise and practice of innovation.
This brief was written from the perspective of a participant-observer. The author was the Principal Investigator of the Colorado Lumina Initiative for Performance, a member of the Ford Foundation’s Colorado Bridges team, designer and initial Project Director of the CCCS, “Ready for College” initiative and co-developer and director of FastStart@CCD.


7 Graduation Counts for Two-Year Public and Community Colleges, Colorado Department of Higher Education (2010).


Community College Bridges to Opportunity Initiative, Ford Foundation: Project Description (June 2003).


To address the long term for sustained funding the governors’ Higher Education Strategic Planning Group identified a number of potential revenue generating strategies that could create a sustained funding source for higher education, including restoring the income and sales tax rates to 5.0% and 3.0%, respectively; expanding sales tax to specific services; implementing a 1.0% surcharge on extraction, implementing a statewide 4.0% mill levy; and implementing a 4.0% mill levy in counties where an institution of higher education is located.


Kristin Corash and S. Jackson, “Cost-benefit Analysis of Front Range Community College Learning Communities,” Internal report to the Colorado Lumina Initiative for Performance (December 2007).

Debra Bragg, *Ready for College in Colorado, Evaluation of the Colorado SUN and the College Connection Program* (Champaign, IL: University of Illinois, Office of Community College Research and Leadership, 2010).


CCD was awarded a total of $330,000 over the course of five years as part of Breaking Through and Scaling Up, joint projects of the National Council of Workforce Education and Jobs for the Future, funded by the Charles Stewart Mott (2006-2009) and Bill and Melinda Gates Foundations (2010).

*Breaking Through* was a four-year project of the National Council of Workforce Education and Jobs for the Future, funded by the Charles Stewart Mott Foundation.

Debra Bragg, *Ready for College in Colorado, Evaluation of the Colorado SUN and the College Connection Program* (Champaign, IL: University of Illinois, Office of Community College Research and Leadership, 2010).

Phone interview with Shanna Jan, Chair of Developmental English, Front Range Community College, Larimer Campus and Director of the Front Range Community College Lumina Initiative (December 13, 2010).

In some course combinations, such as the compressed combination of medium/advanced levels in developmental English and reading, students pay for nine credit hours of instruction, while instructors are paid the equivalent of seven credit hours. In the case of the compressed sequence that combines the low/medium levels of developmental math, students pay for five credits, while instructors are paid the equivalent of six credits.

Debra Bragg, *Ready for College in Colorado, Evaluation of the Colorado SUN and the College Connection Program* (Champaign, IL: University of Illinois, Office of Community College Research and Leadership, 2010).


Increasing Higher Education Attainment in the United States: Challenges and Opportunities

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Draft: Please do not cite without permission from the author.


The collected papers for this conference can be found at www.aei.org/event/100346.
Over the past decade, the traditional policy focus on increasing access to higher education has been supplemented with much greater attention paid to improving the chances that students complete their degree – the completion rate. Even more heartening, debates in the U.S. and many other countries now place heightened emphasis on increasing the proportion of adult workers with a degree – the attainment rate.

This overview report examines issues arising from this shift in policy and pays particular attention to the challenge of increasing degree attainment in the U.S. by:

- describing three measures of higher education—participation, completion, and attainment – and how the U.S. stacks up to other industrialized countries on these measures;
- tracing the evolution of the goals that have been set forth by President Obama and others for improving degree completion and attainment rates;
- considering whether the President’s attainment goal are realistic and how effective are any increases in attainment likely to be in meeting emerging and projected labor force needs; and
- suggesting eight rules for the road to increase our degree attainment in the future.

Examining the Relationship: Participation, Completion, and Attainment

A natural place to start the process of understanding recent debates regarding attainment is to recognize the inter-connection between and the differences in the three key indicators that define the scope and performance of any higher education system—participation, completion, and attainment rates—as defined below:

- Participation rate is the percentage of a population who enroll in higher education.
Completion rate is the percentage of entering students who earn a degree.

Attainment rate is the percentage of the working population who earn a degree.

Examining the Higher Education Attainment Pipeline

While these three rates differ from each other in important ways, higher education attainment rates may be best understood as a pipeline in which these measures relate to each other in a specific way, as indicated in Table 1 and the equation below:

\[
\text{High school attainment} \times \text{higher education participation} \times \text{higher education completion} = \text{higher education attainment}
\]

Table 1: The higher education attainment pipeline

This equation underscores the fact that society can increase higher education attainment at three junctures on the pipeline:
First, by increasing the number of high school graduates, preferably those who are ready to do college-level work.

Second, by increasing the number of students who enroll in college, in the belief that enough of these students will complete their education to lift attainment rates.

Third, by improving the rate at which entering students complete their education.

Table 1 summarizes where the U.S. stands among OECD countries on these different pipeline measures.

High school attainment rates are the culmination of elementary and secondary education and thus represent the first leg of the higher education attainment pipeline. With our long commitment to compulsory education, the U.S. ranks at or near the top in terms of high school attainment rates among member countries of Organization for Economic Co-operation and Development (OECD) countries. This contrasts with U.S. high school graduation rates that don’t rank as high among OECD countries. The fact that a relatively large number of Americans earn their high school degree or its equivalent such as the GED later in life helps explain why we rank higher on high school attainment among OECD countries than on high school graduation.

Participation rates are the most traditional way of measuring the scope of a higher education system. Since the end of the Second World War, the U.S. has transformed itself from an elite to a mass system and then to a universal system of higher education.¹

In the U.S. we tend to measure participation as the share of high school graduates who enroll in college within the next year, in part because reliable data exist for this rate. It stood at 45 percent in 1960 after the first two waves of the GI Bill and grew to 50 percent in 1965 when the Higher Education Act (HEA) was enacted. It reached 60 percent in 1990 and recently
reached 70 percent. Even though many OECD countries have since become mass or universal systems, the U.S. still has one of the highest participation rates.

The high participation rates in the U.S. also are a function of the size of our community colleges. If they were not considered part of American higher education, U.S. higher education participation rates and enrollment figures would be much lower and more in line with data reported by many other countries where further education and technical training programs typically are not counted as part of higher education.

Much of the increase in U.S. participation and enrollments occurred before the student aid programs took hold. The big expansion in enrollments was in the third quarter of the 20th century, primarily in public four-year institutions and community colleges. Overall, public sector enrollments doubled in the 1950s, doubled again in the 1960s and increased by more than one-third in the first half of the 1970s. Since 1975, public enrollments have only increased by 50 percent, with half of that growth in the past decade as student numbers swelled during two recessions.

Completion rates in the U.S. have been mediocre by international standards for many decades. Roughly half of U.S. students enrolling full-time in four-year institutions graduate within six years and less than one-fifth of community college students complete their program within three years. These mediocre degree completion rates largely are the result of the U.S. becoming a mass or universal system long before most other countries as elite systems tend to have higher completion rates.

But the fact that U.S. completion rates have been mediocre for decades seems lost in many recent debates. Speakers or writers will assert we must regain our global leadership in college completion rates when we never exhibited such leadership, at least since we became a
mass system of higher education in the 1950s and 1960s. Either they are confusing college completion with attainment – a distressingly frequent error – or they are failing to acknowledge the inherent tension between our commitment to opening the doors of higher education wider than most other countries and how that may contribute to our lower completion rates. In either case, the persistent confusion between completion and attainment rates often distracts us from having an honest debate on the real issues.

**Attainment rates** were not extensively used in higher education debates until a decade ago but their recent use has enhanced the quality of the debate for several reasons. First, attainment rates by their definition include indices of both access and success and thereby broaden the scope of the debate. Attainment rate data also allow for comparisons by the age of workers, giving some sense of trends over time in attainment, although this feature has been misused in many recent debates. In addition, the use of attainment rates allows for a differentiation between bachelor’s and sub-bachelors programs in various countries whereas participation rate measures tend not to allow for such comparisons.

How our attainment rates compare to those in other countries has played a large role in recent debates about higher education reform. Given the prominence of these arguments, it is worth examining the source data in greater detail. It is particularly important to consider how and why attainment rates may differ by type of degree earned and the age of workers, and to what extent these rates have changed over time.

Table 2 shows how four educational attainment rates compare to those in OECD countries for different age groups and different types of degree. The key observation is that for each type of degree, the U.S. ranking among OECD countries for the oldest age group is higher (better) than the rankings of the younger age groups. It is fair to say that the principal concern
that led to the basic theme for this conference—that we are losing our edge in the global marketplace—is predicated on the fact that the attainment rates of our youngest workers lag behind those in an increasing number of OECD countries.

Table 2: U.S. international ranking in attainment, by age of workers, 2008

<table>
<thead>
<tr>
<th>Age of Workers</th>
<th>25-64</th>
<th>25-34</th>
<th>35-44</th>
<th>45-54</th>
<th>55-64</th>
</tr>
</thead>
<tbody>
<tr>
<td>High School</td>
<td>3rd</td>
<td>Tied 8th</td>
<td>7th</td>
<td>2nd</td>
<td>1st</td>
</tr>
<tr>
<td>Sub – BA</td>
<td>Tied 9th</td>
<td>14th</td>
<td>Tied 13th</td>
<td>Tied 8th</td>
<td>Tied 7th</td>
</tr>
<tr>
<td>BA or more</td>
<td>2nd</td>
<td>Tied 7th</td>
<td>2nd</td>
<td>1st</td>
<td>1st</td>
</tr>
<tr>
<td>Sub-BA or more</td>
<td>3rd</td>
<td>Tied 8th</td>
<td>Tied 4th</td>
<td>3rd</td>
<td>Tied 2nd</td>
</tr>
</tbody>
</table>

Source: OECD, Education at a Glance, 2010, Tables A1.2a and A1.3a

But as in so many public policy issues, the data need to be looked at more carefully to get the full story. One consideration is that many countries with higher attainment rates among their younger workers are undergoing radical changes in their higher education systems. The most obvious example of this is the large number of European countries conforming to Bologna process requirements such as moving from the traditional five-year bachelor’s degree to degrees of three or four years’ duration. But unless we think that three-year bachelor’s degrees are the answer to our attainment challenge, it makes little sense to tie our reform agenda to European developments, especially as much of the Bologna process such as transferring credits represents Europe trying to emulate us.

We also ought to understand the underlying demographics. Many of the countries overtaking us in attainment have declining numbers of traditional college age youth because of low birth rates and net out-migration. They are therefore educating an increasing share of a
declining base. They may well be outpacing us on attainment rates but they are going to have a
device of a time filling all their jobs in the future.\textsuperscript{10}

Immigration patterns also lead to attainment rate comparisons that are somewhat
decieving. The U.S. has had more much rapid increases in immigration than most other OECD
countries. To the extent that our immigrants tend to be less well-educated than our resident
population, this reduces our attainment rates.

Another comparison from Table 2 is the similarity in the rankings for the U.S. attainment
for secondary and postsecondary degrees. I find it interesting that this remarkable similarity has
been so little remarked upon in recent debates. It would seem from looking at Table 2 that the
factors that have contributed to the decline in the rankings for the youngest group of workers in
postsecondary education are also at work when it comes to our high schools. It is also interesting
to note that the slowing increase in high school attainment rates was one of the premises of \textit{A
Nation at Risk} when it was released a quarter century ago.\textsuperscript{11} It seems the issue of declining high
school performance was not fully addressed and has now spread to higher education as well, at
least as it applies to the younger workers.

\textbf{Solving the Community College Conundrum}

While contextual factors like demographics and immigration patterns are an important part of the
story, one fact is clear: a primary cause of the US’s middling attainment rates is the low
attainment rate among our community college students. Table 2 confirms large differences in
where the U.S. ranks by type of postsecondary degree held; the U.S. rank for bachelor’s degrees
is much higher for every age group than it is for sub-bachelor’s degrees.
The poor ranking of the U.S. when it comes to sub-bachelor’s degrees raises an interesting issue, one that I refer to as the “community college conundrum.” Associate’s degree attainment rates have been relatively flat for many years in the U.S. despite the fact that associate’s degrees are the fastest growing type of degree awarded, as Figure 1 indicates. From 1970 to 2005, the number of associate’s degrees annually awarded grew at an average annual rate of 3 percent per year, twice that of bachelor’s degrees and slightly faster than master’s degrees awarded. Interestingly enough, the annual growth of bachelor’s and associate’s degrees awarded exactly mirror the growth of enrollments in their respective sectors. Yet despite the rapid annual growth in associate’s degrees awarded, the attainment rate for workers holding them remains in the middle of OECD countries.

**Figure 1: Average annual growth in degrees awarded, enrollments, and population, 1970 to 2005**
How can this be so? A chief reason is that our associate’s degrees are often not terminal ones; one estimate is that 17 percent of those earning a bachelor’s degree have previously earned an associate’s degree.\(^\text{12}\) In contrast, technical training programs in other countries often lead to terminal degrees so that those receiving these degrees do not eventually show up as bachelor’s degree holders nearly as often as in the U.S. Although data are sketchy, a reasonable estimate is that as many as 10 percent of those earning associate’s degrees in the U.S. already have bachelor’s degrees and are coming to community colleges for retraining. They, too, show up in the data as bachelor’s degree holders.

What other countries require of their students also can make a difference. For example, Canada has the highest combined attainment rate in the world because it has the highest sub-bachelor’s rate. One reason that Canada’s sub-bachelor’s rate is so high, though, is that Quebec, one of the largest provinces, requires all its students to attend intermediate two-year degree programs between high school and college. The degrees earned in these intermediate programs pump up Canada’s overall attainment rate.\(^\text{13}\)

**Attainment Rates: Separating Fact from Fiction**

A frequent assertion in recent debates and a premise of the President’s initiative is that we need to regain our historical position as number one in attainment. But the source data casts doubt on this assertion as it is not provably true that we were ever first on the combined attainment rate. The first year for which I can find combined attainment rate data for enough countries to be meaningful is 1991 when the U.S. already ranked third behind Canada and Finland.\(^\text{14}\) Even then, this ranking was entirely because our sub-bachelor’s rate was so mediocre that it offset our long standing hegemony on the proportion of the population with a bachelor’s degree or higher.
In warning us about the consequences of losing our global lead in attainment, many observers have argued that the U.S. standing on attainment has declined over time because our attainment rates have been flat for decades. Two examples of these statements are:

“College attainment rates are rising in almost every industrialized country in the world, except for the U.S. Today roughly 39 percent of American adults hold a two- or four-year degree. That attainment rate, which has held steady for four decades, led all other nations for much of the postwar period.”

“Today, only 40 percent of young adults have a college degree – a lower percentage than eleven other countries and no higher than a generation ago.”

Tables 3 and 4 indicate why the above statements and similar ones about stagnant attainment are simply incorrect. Table 3 shows the attainment rates for sub-bachelor’s degrees or more from 1991 to 2008 in the U.S. and the average for OECD countries. This table makes clear that U.S. attainment rates have steadily increased over the past two decades and have at least kept pace with the average for OECD countries, for both younger workers and across all age groups. Table 4 indicates how bachelor’s degree attainment rates have grown since 1950. It makes clear that bachelor’s degree attainment rates in this country have been growing at a healthy rate for more than a half century.

This notion of stagnant attainment is one of the more counterproductive aspects of our current national debate. It has led a broad range of policymakers, opinion leaders, and the public at large to assert that a problem is at hand when it is not. But why are so many saying that our attainment has been flat when the source data make it clear that attainment rates have continued to increase steadily even after we have moved to a mass or universal system? The basic problem seems to be that officials from OECD, the Lumina Foundation, and others are using a mistaken
assumption to come to incorrect conclusion, and then others are picking up on the incorrect assertion.\textsuperscript{18}

Table 3: Attainment rates in the U.S. and OECD countries, by age of workers, 1991-2008

<table>
<thead>
<tr>
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<tbody>
<tr>
<td><strong>25 to 34 Year Olds</strong></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Sub-Bachelor's or More</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>US</td>
<td>30%</td>
<td>34%</td>
<td>38%</td>
<td>39%</td>
<td>42%</td>
</tr>
<tr>
<td>OECD</td>
<td>20%</td>
<td>22%</td>
<td>26%</td>
<td>32%</td>
<td>35%</td>
</tr>
<tr>
<td><strong>25 to 64 Year Olds</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sub-Bachelor's or More</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>US</td>
<td>30%</td>
<td>33%</td>
<td>36%</td>
<td>39%</td>
<td>41%</td>
</tr>
<tr>
<td>OECD</td>
<td>18%</td>
<td>19%</td>
<td>22%</td>
<td>26%</td>
<td>28%</td>
</tr>
</tbody>
</table>

Source: 2004, Tables A3.4a and A3.4b; 2010, Tables A1.4 and A1.3a

Table 4: U.S. attainment rates by age, 1950-2009

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td><strong>Four Years of College or More (by age of worker)</strong></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>25 Years Old and Over</td>
<td>6%</td>
<td>8%</td>
<td>11%</td>
<td>17%</td>
<td>21%</td>
<td>26%</td>
<td>30%</td>
</tr>
<tr>
<td>25-34 Years Old</td>
<td>5%</td>
<td>11%</td>
<td>16%</td>
<td>24%</td>
<td>24%</td>
<td>29%</td>
<td>32%</td>
</tr>
<tr>
<td>55 Years Old and Over</td>
<td>4%</td>
<td>5%</td>
<td>8%</td>
<td>10%</td>
<td>15%</td>
<td>19%</td>
<td>26%</td>
</tr>
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<td></td>
<td></td>
</tr>
<tr>
<td><strong>Four Years of High School or More</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25 Years Old and Over</td>
<td>34%</td>
<td>41%</td>
<td>55%</td>
<td>69%</td>
<td>78%</td>
<td>84%</td>
<td>87%</td>
</tr>
<tr>
<td>25-34 Years Old</td>
<td>47%</td>
<td>58%</td>
<td>73%</td>
<td>85%</td>
<td>86%</td>
<td>88%</td>
<td>88%</td>
</tr>
<tr>
<td>55 Years Old and Over</td>
<td>19%</td>
<td>23%</td>
<td>36%</td>
<td>50%</td>
<td>62%</td>
<td>74%</td>
<td>83%</td>
</tr>
</tbody>
</table>

Sources: U.S. Census, Educational Attainment, Historical Tables, Table A-1, Years of School; Completed by People 25 Years and Older, by Age and Sex, Selected Years 1940-2009; NCES, Digest of Educational Statistics, 2009 Table 8; 1995 Table 11
The source of the analytic problem is the assumption that the lack of difference in attainment rates between the youngest and oldest workers in the U.S. means our attainment rates have not grown over time. This inference also has led many groups to suggest that our younger workers now have lower attainment rates than the older workers for the first time in our history.\(^{19}\) This latter suggestion also seems without merit or foundation. As Tables 3 and 4 show, over time the attainment rate for 25-34 years olds have consistently been higher than the rates for older workers. That continues to be the case.

These incorrect assertions reflect a fundamental misunderstanding of attainment rates as they are cumulative measures that track an age cohort over time. As such, the rate of attainment for a cohort of workers will increase as they age. For example, if 20 out of 100 workers have earned a bachelor’s degree by the time they are 25 years old, the cohort’s attainment rate is 20 percent. If 10 more members earn a degree over the next 30 years, then the attainment rate for the cohort (now 55 years old) is 30 percent (30 out of 100).

Is it a bad sign that the younger and older age groups have similar attainment rates? No. On the contrary, we should be celebrating if the attainment rate for a given age cohort grows over time because it means workers are seeking more education and training throughout their careers. Table 4 makes it clear that growth is occurring in two ways. First, the attainment rate for the 25-34 year olds today is significantly higher than it was for 25-34 year olds ten, twenty, or thirty years ago. In addition, the rates for those older than 55 years of age are substantially higher than the rates of those 25 years and older thirty years before (these are the same people). From both perspectives, then, attainment rates in the U.S. are growing, not declining or stagnant as is so often stated in recent debates.
Setting the Goals for Achieving Greater Attainment or Degree Completion

In response to reports decrying low completion rates and declines in how our attainment rates rank relative to other countries, a number of national organizations have set goals for improving these two measures of higher education performance. Initially, the goals were set principally in relation to increasing the number of degrees earned and improving attainment rates; more recently, the goals have been more tied to improving college completion rates. Table 5 summarizes some of the organizations and their goals.

Table 5: Stated attainment and completion goals of different groups

<table>
<thead>
<tr>
<th>Group</th>
<th>Stated Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Attainment Goals</strong></td>
<td></td>
</tr>
<tr>
<td>Jobs for the Future (2003)</td>
<td>Double the numbers of low income college graduates</td>
</tr>
<tr>
<td>Lumina Foundation (2008)</td>
<td>Achieve 60 percent attainment rate for 25-64 year olds by 2025</td>
</tr>
<tr>
<td>College Board (2008)</td>
<td>Achieve 55 percent attainment rate for 25-64 year olds by 2025</td>
</tr>
<tr>
<td>Obama administration (2009)</td>
<td>Achieve 60 percent attainment rate for 25-34 year olds by 2020</td>
</tr>
<tr>
<td>Gates Foundation (2010)</td>
<td>Double the number of degrees and certificates awarded</td>
</tr>
<tr>
<td><strong>Completion Goals</strong></td>
<td></td>
</tr>
<tr>
<td>Community College Associations (2010)</td>
<td>Increase community college completion rates by 50 percent over the next decade*</td>
</tr>
<tr>
<td>McKinsey and Company/ Gates Foundation</td>
<td>Increase annual number of college graduates by 1 million per year over the next decade</td>
</tr>
<tr>
<td>College Board (2009)</td>
<td>Dramatically increase college completion rates</td>
</tr>
<tr>
<td>National Governors Association (2010)</td>
<td>Increase rate of completion for degrees and certificates so that 8 million additional college students graduate by 2020</td>
</tr>
</tbody>
</table>

* Proclamation reads that goal is to ‘double the numbers of quality degrees and certificates awarded by 2020’
Goals for Improving Attainment

The most prominent voice declaring goals for higher education has been President Obama. In his first speech to Congress in February 2009 he declared that: “by 2020, America will once again have the highest proportion of college graduates in the world.” This statement eventually was translated into a more precise statement that 60 percent of our workers 25-34 should have a degree by the year 2020 so that we would have the highest combined rate among OECD countries.

But goal-setting along these lines began much earlier in the decade, and it is worth examining how the debate has evolved over time. This history might start with work done in the early 2000s by Jobs for the Future (JFF) under the direction of its president, Hilary Pennington, now a senior official with the Bill and Melinda Gates Foundation. In October 2003, JFF sponsored a conference that resulted in an edited volume of papers entitled Double the Numbers. As the title suggests, the theme of the conference and the volume was to identify policies and practices that would lead to doubling the number of low-income students gaining quality postsecondary degrees and credentials.

The Double the Numbers effort was significant in several regards. It was one of the first national higher education efforts in which the goal was to increase the number of graduates from disadvantaged circumstances rather than the number of students who enrolled. It thus shifted the focus from the middle of the attainment pipeline to the end result of graduates entering the work force. It also represented an effort to bring officials from K-12 and higher education together to work toward a common goal, not typical in education policy. And although most of the focus was on the traditional means of using student aid and better alignment between K-12 and higher education to achieve the goal, at least two papers in the volume discussed what could be done to
encourage institutions to graduate more of these targeted groups of students. This represented one of the first steps in shifting discussions of performance-based funding in higher education in this country from setting aside funds to building performance measures into funding formulas.

Much of the groundwork underlying *Double the Numbers* and other related efforts was done by Dennis Jones and his colleagues at the National Center for Higher Education Management Systems (NCHEMS). It was built on their innovative approach of using attainment rates rather than the more traditional participation rates to compare states and OECD countries in measuring the scope of their higher education systems. This NCHEMS analysis was critical in the process of translating the initial JFF goal of increasing the number of degrees awarded into the notion of improving the attainment rate in the U.S. so that we could once again be a leader among OECD countries.

The analysis of Jones and his colleagues also led a number of groups to examine this issue further and publish the results of their examination. In a policy brief published by JFF in 2007 entitled *Hitting Home*, the authors reported how the U.S. was falling behind many other countries in their attainment rate on the basis of the OECD data. It also showed how states differed in the proportion of 25-34 year olds with a postsecondary degree and how most states were far behind Canada’s combined attainment rate of 55 percent. Based on this data, the report argued the U.S. needed to increase its attainment rates substantially if we as a nation were to maintain our ability to compete globally.

The Lumina Foundation for Education was the next organization to throw its hat into the attainment rate ring. Jamie Merisotis was one of a group of higher education analysts who had identified increasing higher education attainment as a key variable in determining America’s future economic success. When he became president of the Foundation in 2008, he convinced its
board to embrace a “big goal”: to increase the percentage of Americans with high quality degrees and credentials from 39 percent to 60 percent by the year 2025.” The College Board also got into the act in 2008 when its Commission on Access, Admissions and Success in Higher Education declared that the U.S. should have a goal that 55 percent of 25-64 year olds should hold an associate’s degree or higher by 2025. In 2010, after several iterations the Gates Foundation clarified its primary goal as doubling the numbers of degrees and certificates awarded.

These various calls for more attainment were clearly influential in convincing the Obama administration to adopt a similar goal as the keystone of its very aggressive higher education agenda. What is less clear is how these figures, years, and targets were picked in each case. One wonders, for example, why the administration picked the youngest group of workers while Lumina focused on improving attainment among all workers, or why the administration picked 2020 versus Lumina’s and the College Board’s 2025 (since either was beyond the President’s possible term of office). Whatever the targeted group and year, it is clear each organization was sincerely motivated to restore the U.S. to prominence in higher education attainment as a vehicle for us to become more economically competitive.

What is also clear, though, is that in setting specific goals, problems can arise as to what may or may not be included in the goal. For example, each of the goals described above, and those by other organizations, have tended to focus on increasing the rate for those holding associate’s degrees or higher, meaning that they do not differentiate between those holding associate’s degrees and those with a bachelor’s degree.

This tendency not to differentiate between bachelor’s and sub-bachelor’s degrees is one of the more problematic aspects of the attainment debate. Given that we continue to be among
the countries with the highest bachelor’s degree attainment rate while consistently we are average to below average when it comes to sub-bachelor’s degree attainment, recommendations for improving the combined rate are likely to be less effective than if the problem is broken into its two respective parts. *Combining these two rates into one obscures too much information to be helpful in deciding which strategies are most worth pursuing in the push to increase attainment rates.*

One particular concern is that we will adopt strategies that are of less relevance for community colleges even though the data show that they are the biggest problem for the U.S. in increasing our attainment rates. The lack of differentiation in goals could very well lead to a lack of differentiation in strategy as well, giving rise to reforms and initiatives that do not focus enough on the very low rates of completion and the mediocre international standing of the U.S. when it comes to attainment of sub-bachelor’s degrees.

Another problem with being too specific about the goal is that certain key groups of people or types of activity may be excluded. For example, the administration’s decision to focus on increasing the attainment rate for the youngest group of workers excludes two critical groups: those older than 34 years of age and the millions of individuals who hold certificates for the training they receive. Though older workers would clearly benefit from additional education and training, any progress we make on increasing the educational attainment of older workers will not be recorded in the list of the President’s achievements. The same goes for students who enroll in certificate and degree programs that are less than two years in duration or those individuals who become apprentices because these activities do not qualify as degrees under the traditional U.S. or OECD definition of attainment.
The Shifting Focus to Completion Rates

The more recent trend in goal setting related to higher education has been to emphasize increases in degree completion rates as the primary path to increasing attainment rates. In Hitting Home, JFF in 2007 attributed much of the reason for the decline in U.S. attainment to low completion rates:

“We are losing ground to other nations largely because of relatively low college completion rates. Although the United States still ranks in the top five in the proportion of young people who attend college, it ranks 16th in the proportion who actually finish, according to the National Center on Public Policy and Higher Education’s Measuring Up 2006’s report.”

This shift in focus to improving completion rates as the principal means for improving our attainment rate has gained considerable steam in the past several years. For example, six major community college associations in 2010 agreed that student completion rates should be increased by 50 percent over the next decade (though the proclamation itself reads that they commit to “produce 50 percent more students with high quality degrees and certificates by 2020”). Also in 2010, the College Board augmented its attainment rate goal with a much more vague declaration that completion rates must be dramatically increased. And the National Governors Association (NGA) selected Complete to Compete as its major policy theme for 2010-2011; it exhorts states to increase degree completion rates so that President Obama’s goal of increasing the number of college graduates by 8 million over the next decade can be reached.

The Obama administration also seems to have shifted its focus to completion rates. In a November 2010 speech, Deputy Secretary of Education Tony Miller focused almost exclusively on the need to increase completion rates as the means to reach the President’s goal of increasing attainment rates. Deputy Secretary Miller’s emphasis reflects a growing tendency within the
administration and elsewhere that equates increasing degree completion rates with increasing attainment in what many now refer to as the ‘college completion agenda.’

The growing emphasis on completion rates as the principal vehicle for increasing attainment rates poses two problems. First, it ignores the fact that increasing participation rates must be a key part of the solution for increasing attainment. Second, this emphasis fails to recognize that increased completion rates could be achieved by reductions in quality or increases in selectivity, both of which would be detrimental to the larger goal of increasing the share of adults with a credential that has real labor market value.

On the first point, the shift towards completion rates largely ignores the arithmetic fact that increasing attainment rates substantially will require very large increases in both the completion rate and the participation rate. A recent report prepared by McKinsey and Company for the Gates Foundation underscores this fact by displaying a chart which shows how much each rate must be increased to achieve the kinds of increases in attainment rates called for by the Obama administration and others. The McKinsey figures indicate that to reach the goal of a 60 percent attainment rate, it would be necessary to have participation and completion rates in excess of 80 percent. And the McKinsey analysis if anything understates the effort needed since raising the rates for the entire cohort means that the rates for the new entrants must be even higher to offset the lower rates for the majority of workers who are already through the system. The McKinsey figures also underscore the difficulty of moving the attainment rate needle much over a relatively short period of time.

The second concern with the growing emphasis on raising completion rates is that it fails to recognize that increasing these rates is not always a good thing to do. In football parlance, when someone throws a forward pass, two of the three things that could happen are bad – an
interception or an incomplete pass – while only a completed pass is good. In terms of increasing higher education completion rates, two things that could happen are bad – standards could be lowered or selectivity could be increased (which while good in some respects would tend to lead to lower attainment rates because fewer students would finish).

A related problem in using higher completion rates as the primary goal is that efforts to increase them could be portrayed as improving attainment when they may really serve another purpose. Take the case of Louisiana where the passage of legislation in 2010 was based on the promise that more funding would be provided to universities that raised their graduation rates. The stated purpose is to increase both numbers of graduates as well as increasing the degree completion rate by seven percentage points over six years. This Louisiana program has been lauded by Gates Foundation and others working with the Foundation for moving its higher education funding scheme to a performance basis.

Upon closer examination, however, those involved with the effort admit that Louisiana is using the goal of higher graduation rates as a way to encourage the state’s universities to raise their admissions standards for entering students because many officials (apparently rightly) believe the current standards are too lax. Another underlying purpose is to move more students into the chronically underutilized community college sector. These are certainly reasonable goals, but the effort should be labeled for what it is and not lauded as a way of improving attainment which it may well not.

The Louisiana effort is also a good example of what I consider to be a broader problem: using rates as a policy goal when numbers will do a better job. In Louisiana, Ohio, and other states that have built completion rates into the funding mechanism, there are generic problems associated with using rates as goals because it is almost always hard to define the denominator
without controversy. In the specific case of completion rates, the ‘denominator problem’ includes: How does one count students who transfer to another school and complete their degree there? How does one count students who transfer into your school and then graduate? Are part-time students counted the same as full-time students, differently, or not at all?

This is of concern with regard to any initiative advocating for large scale increases in completion rates. Imagine that the president of a college sits down with the dean and says we will be getting more funding if we can increase our “miserable” graduation rates. The light bulb goes on the dean’s head who figures out if they can get rid of all those students taking remedial courses they can make the faculty happier by eliminating headaches, improving quality, and getting more funding to boot. They will also be able to cut their default rates because poorly prepared students won’t be adding to the list of defaulters. The only reason not to go this route is if officials are unwilling to forego the tuition revenues paid by the poorly prepared students.

Tying policies to completion rate goals could also negatively affect access for low income and minority students, as strategic schools will choose to become more selective in order to enroll students with the best chance of completing. It is also difficult to design a policy using completion rates that targets high priority fields of study such as science and engineering, or education for that matter. By contrast, policies tied to increasing the numbers of low income and minority students who graduate or policies that encourage more students to earn degrees in high priority fields would reward institutions to recruit these students rather than excluding them as a graduation rate goal might do.

To be sure, setting goals that aim to increase the number of graduates still raises the issue of ensuring that quality is not reduced in the rush to reach the goals, but that’s a problem with using graduation rates as well. In general, quality assurance should be key to any of these
initiatives, but I think many of those calling for increased completion rates have paid too little attention to it in their calls for action. At least tying goals to the number of graduates doesn’t raise the selectivity issue and quality debasement simultaneously.

The argument for adequate quality control also applies to efforts that seek to increase attainment rates, which is a tricky business for the reasons described above. Increasing the number of degrees awarded each year or increasing the numbers of workers with degrees is much more straightforward. To the extent that the population is changing in a predictable way, increasing the numbers also increases the proportionality.

The early goals laid out by JFF for doubling the numbers of low-income students obtaining degrees made good sense. That is why I have argued for rewarding states and institutions on the basis the number of Pell Grant recipients who graduate rather than graduation rates. While this goal still raises concerns about quality and growing debt burdens, I continue to think that would be a more understandable focus that would produce better results than the current emphasis on increasing completion rates and attainment rates for all students as the key policy goals.

Assessing the President’s Goal: Is It Realistic? Will the Effort Be Effective?

The origin of the President’s attainment initiative seems straightforward. When he came into office in January 2009, officials in his administration picked up on a drumbeat that had been building for several years: America was falling behind many other OECD countries in the proportion of its workers who had a college degree. This spelled trouble for our capacity to compete in the global marketplace because other countries would have more highly trained workers, in contrast to earlier decades when we were first in the world on this key education
statistic. For the new administration with a heavy Democratic majority in both houses of Congress, this meant a huge challenge – making the U.S. more globally competitive—could be addressed and hopefully solved by improving the performance of our higher education system.

The administration’s higher education initiative also fit well with the president’s intent to shake up the K-12 educational establishment. Recent discussions about the decline in American higher education mirror a much longer and larger discussion about how U.S. elementary and secondary school students have fallen behind in the basic skills of math and science and what that portends for U.S. global competitiveness. Many now draw a comparison between the mediocre math and science performance of the U.S. in primary and secondary education and declines in U.S. attainment rates in higher education.

I think this analogy between mediocre U.S. rankings in high school test scores and higher education attainment rates is flawed in several respects, including the fact that one discussion is about what students know and the other is about how many people graduate, which may or may not be related positively to student quality.

But to see the problems in setting ambitious and unrealistic goals, one only needs to examine the track record of K-12 education in this country in recent decades. The Goals 2000 set out in 1989 included that “all children in America will start school ready to learn and that American student would be first in the world in math and science by 2000.” These goals were not met by 2000; we are no closer to reaching them now. Since the proficiency goals set forth in the NCLB legislation are no more realistic or reasonable than those laid out in Goals 2000; a good case can be made that both efforts have contributed more to a watering down in standards and heightened gaming of the system.35
Is the President’s Goal Realistic?

One question relevant for this conference is whether the Obama initiative in higher education is any more realistic than the national goals set in K-12 education over the past several decades. The simple answer is that the Obama goal is equally unrealistic. Figure 2, which displays the increase in attainment rates over the last four decades, indicates why the goal is unrealistic. As the figure shows, far from being flat, the bachelor’s degree attainment rate has been increasing at a remarkably stable rate of roughly 0.5 percent per year for the past forty years, and Table 3 confirms that the combined attainment rate has been increasing at about that same pace in the two decades since it has been regularly recorded. What Figure 2 also clearly shows is that this rate of increase would have to accelerate dramatically – quadruple, in fact, to 2 percent per year for the entire decade – to reach 60 percent by the end of the decade.

Figure 2: Attainment rates for sub-bachelor’s degree or more, workers aged 25-34 years old, 1970 to 2020 (projected)
An irony here is that administration officials have bought into the argument that attainment has been flat for a generation or more. But if this were in fact true, reaching the President’s goal would be even harder to achieve because the rate would have to increase at remarkably rapid rates after having stood still for decades. To make another sports analogy, this is like doing the broad jump from a standing start. It will be hard enough to achieve the President’s goal of 60 percent attainment rate by 2020 assuming we have a running start of steady growth in attainment over time, but proposing to increase the current attainment rate by 50 percent over a decade from a standing start is totally unrealistic.

As a general matter, then, the likelihood of achieving a 60 percent attainment rate by 2020, or even 2025, is close to nil. The only way that these goals could be reached is for a lot more money to be spent on higher education in this country, something on the order of shifting from 3 percent of GDP to 4 percent of GDP, or for federal and state policies to be sharply revised to reflect the heightened commitment to increasing attainment. So far there is little evidence of either of these shifts happening.

Another possibility, though, is to redefine the goal. For example, if one were to look at all workers 25-64 years old, we are much closer to being number one now among OECD countries and thus we are closer to gaining our number one status by 2020. But it also would be more difficult to increase attainment rates for all workers because most of the current adult population has already finished their education. A definitional change that would produce greater success would be to include workers who hold certificates and other non-degree credentials which are not currently counted in the figures reported by OECD.37

It appears that NGA and Complete College America are two organizations who realize this point as they have redefined their goals for increasing attainment and completion rate to
include certificates as well as degrees awarded. While this change is reasonable, it will complicate future rate comparisons if it is not clear we will be measuring future rates differently than when the goals for improvement were first established.38

Comparing to Past National Mobilizations

One way of judging the realism of the President Obama’s initiative is to examine how much attainment grew during previous national mobilizations involving higher education including: the GI Bill, the National Defense Education Act of 1958, and the Higher Education Act of 1965. Each was related to a major global event or a compelling national concern that motivated politicians and the public to unite in recognizing that something needed to be done. It is worth noting, however, that none of these earlier mobilization efforts set specific goals, in contrast to the current initiative for increasing completion and attainment rates.

To judge the impact of these national efforts on attainment, Table 4 (on page 12) shows the U.S. attainment rate for bachelor’s degrees or more from 1950 to 2009 by decade for all workers, the youngest group of workers, and the oldest group of workers. It shows the rates for each age group have consistently increased over the past half-century.

But there are only two decades since the 1950s when the attainment rate grew by at least 50 percent which is the percentage growth in the overall attainment rate needed to reach President Obama’s goal by 2020 - the 1950s and the 1970s. In the 1950s, the underlying data confirm that the growth in attainment for the youngest group of workers was a function of the GI Bill opening opportunities for veterans from the Second World War and the Korean War. The number of males aged 25 to 34 year olds with four years of college or more increased by 60
percent from 1950 to 1960 while the number of female workers of that age group earning college
degrees grew by 20 percent.

The attainment rate for all workers and younger workers also grew by at least 50 percent
in the 1970s. But rather than being the result of Vietnam-era GI Bill recipients going to college,
the data show the attainment increase was larger for females than males. The number of younger
male bachelor’s degree holders doubled during the 1970s, but the number of younger females
holding at least a bachelor’s degree grew by 150 percent; the number of the youngest groups of
workers of both genders increased 25 percent.39

What we may have here is evidence that increased student aid in the 1960s and
1970s enabled an exceptionally large number of females to enroll in college and finish a degree.
But there is little reason to believe that the recent big increases in Pell Grants will net similar
results as the participation rate is already high. The group where it might work, though, is males
if we could figure out how to target them for assistance.

Will the Effort be Effective?

Ultimately, judging whether the President’s initiative will be effective requires asking
whether the number of new graduates produced will fully meet projected labor force needs so
that we can become more globally competitive in the future. Unfortunately, there is no clear
answer to this question, which may be why the current initiative is not nearly as compelling as
earlier national mobilization efforts in higher education. Estimates of new degrees needed to
meet labor force needs are all over the lot, and they often are not clearly stated. The
administration has talked about 8 million new graduates, but it is not clear to me about how this
figure relates to projections of new graduates in the absence of its initiative.
To provide some perspective, we can look at the flow and stock of the population with a college education. Roughly 700,000 students now annually receive an associate’s degree while 1.7 million students annually earn a bachelor’s degree, for a total of 2.4 million. In terms of the ‘stock’ of degree holders, currently there are roughly 60 million individuals with at least a bachelor’s degree (four years or college or more) and roughly 50 million with one to three years of college, including about one-third or more who hold an associate’s degree.

So how many more degree holders does the economy require to meet future labor force needs? Here is where estimates and projections sharply diverge. Those supporting the administration’s view, such as Tony Carnevale and his colleagues at Georgetown University’s Center on Education and the Workforce, have produced a series of reports indicating the economy will require many millions of new college graduates over the next decade and beyond to keep us globally competitive. The Gates Foundation and others report that by 2018 more than 6 in 10 jobs will require workers with some sort of postsecondary education. The previously cited McKinsey report estimates we must produce one million more graduates per year over the next decade – an increase of 40 percent over the current annual volume - to meet future labor force demand.

The opposite view is well expressed in a recent report produced by Richard Vedder and colleagues at the Center for College Affordability and Productivity. It begins by saying that “colleges and universities are turning out graduates faster than America’s labor markets are creating jobs that traditionally have been reserved for those with degrees.” This leads the authors to conclude that we are over-investing public funds in colleges and universities, which echoes and reinforces the recent work of Charles Murray and others.
A related issue is how many additional certificate holders are needed to meet the need for well-trained non-college graduates for the many vocationally oriented positions that will require filling as well. A number of recent analyses do not address this issue, but a recent report entitled *Certificates Count* makes this point well—it estimates the number of certificates annually provided and argues that individuals gaining shorter-term certificates or becoming apprentices can make a real difference in meeting our future job force needs.47

**Eight Rules of the Road for Increasing Attainment in the Future**

This paper has examined the data on participation, completion, and attainment to put the current higher education debate in perspective. To summarize the results of this statistical tour, the underlying data suggest the president has set a national goal for increasing degree attainment that would be almost impossible to achieve in the best of circumstances. And we all know these are hardly the best of circumstances.

But we also know that it makes sense for us as a nation to improve the preparedness of students and the quality of postsecondary education and training they receive to help us remain globally competitive. To achieve this goal, this concluding section lays out eight rules for the road that could help us meet our future national and regional labor force needs.

1. **Get the facts straight.** In nearly forty years working around higher education policy debates, I can’t remember another time when the facts were so mangled in the effort to make the case for needed changes or improvement. Arguing that attainment rates have been flat when they have grown steadily is one example. Another is the frequent conflation of completion and attainment rates or the assertion that we must regain our
international lead in completion rates when we haven’t had it in decades, if ever. These errors detract from the quality of the debate and can lead to mis-specification of goals.

2. **Refrain from setting unrealistic national goals.** The higher education debate increasingly seems to be following the path that has dominated the K-12 debate in this country for the past several decades – setting unrealistic national goals as well as proposing to have the government become much more involved in academic issues. This seems unwise given that our K-12 education system is generally regarded as mediocre by international standards, while U.S. universities dominate the global rankings and American higher education is still viewed by most observers as the best in the world. The solutions to the very real challenges facing higher education should respect its great diversity and its traditional independence from government involvement in academic matters.

3. **Address all facets of the higher education attainment pipeline.** The recent focus on raising completion rates as the primary means to lift attainment is counterproductive, in my opinion. To make real strides in improving attainment, we must address all facets of the higher education attainment pipeline. In this regard, probably the single most important thing we can do to increase higher education attainment in this country is to improve the preparation of students coming out of high school. This would not only help on degree attainment, it also would improve the job readiness of the millions of students who do not continue their education after high school while saving billions in other societal costs.

Another problem with the growing emphasis on increasing completion rates is that it diverts attention from increasing enrollments as an effective strategy for
increasing attainment. The most frequent response to state funding cutbacks has been to raise public sector tuitions. A seemingly unrecognized reality, though, is that increasing enrollments without raising prices is the most direct way to improve productivity in higher education while promoting greater access. Institutional officials should therefore try to find ways to expand at current prices by growing enrollments in those academic units where capacity utilization is low as measured by faculty teaching loads and student/faculty ratios.48

4. Depend More on Innovative Policies to Meet Goals. For all of the rhetoric devoted to the President’s initiative, the reality is that policies enacted thus far are unlikely to increase attainment rates. The principal higher education achievements during the 111th Congress were a total shift to Direct Loans and a huge increase in funding in Pell Grant as part of the economic stimulus legislation. Whatever their merits, however, neither of these policies are likely to produce cost-effective improvements in completion or attainment rates or even lead to big increases in the number of degrees awarded.

To be fair, President Obama did propose some bolder higher education initiatives such as an access and completion fund that would pay states and institutions based on their performance and a substantial community college initiative. But these proposals did not make it through Congress and significant funding for them never materialized. In this regard, one is reminded of Rick Hess’ recent criticism of K-12 education when he writes that calls for reform have been brash but remedies have been bashful and notable for their timidity.49 That seems to be the case for the higher education as well.

5. Understand why other countries are succeeding. The recent preoccupation with where we rank on attainment compared to other OECD countries sometimes obscures
the real value of international comparisons – to identify what strategies countries are using to achieve the desired result of higher attainment rates. I co-wrote a report for JFF in 2009 on cost, commitment, and attainment in higher education in which eight successful strategies that OECD countries have utilized to achieve high rates of attainment were identified. These included expanding sub-bachelor’s programs, reducing time-to-degree, and relying more on the private sector to accommodate bulging demand. As in other policy areas, learning from others can be a key to our future success in improving our attainment rates.

6. Aim to increase the numbers of degrees awarded, not rates. Setting policies in terms of increasing completion or attainment rates is problematic because of the difficulties associated with defining the denominator. For this reason, it would be better to set institutional and national goals in terms of increasing the number of degrees awarded than focus on increasing rates of completion or attainment. Setting numerical goals allows for a better connection to chronic equity concerns since the goals can be set more easily for different groups of students. Goals for degrees awarded also makes for a better connection to relevance because they can easily be tied to degrees awarded in different fields of study.

7. Tailor policies by type of degree or credential. By setting broad overall objectives, the administration and others engaged in the debate have not differentiated enough between bachelor’s degrees and associate’s degrees in identifying problems or in proposing solutions. To be successful in substantially increasing attainment and numbers of degrees awarded, policies ought to be targeted on where attainment rates are lowest, principally associate’s degrees. We also need to examine carefully how to increase the
number of certificates and apprenticeships which will be equally critical in meeting future labor force needs but do not currently count in traditional measures of attainment rates.

8. Ensure that quality is maintained or improved. One of the greatest concerns about the rush to increase rates and numbers of degrees is that quality will be sacrificed. Yes, the goal of increasing attainment and completion rates is typically stated in terms of providing quality credentials, but it seems fair to say that maintaining or improving quality has been the junior partner in the general push for improving completion and attainment rates. This under-emphasis on quality concerns needs to be reversed if the drive for greater completion and attainment is ultimately to be successful in meeting the needs of employers and other higher education stakeholders.

Conclusion

In sum, this collection represents an opportunity to reassess recent efforts in this country to increase attainment. That reassessment should include setting more realistic goals for increasing the number of different types of degrees and certificates, with a special emphasis on improving the situation of low income and minority students and focusing on fields of study deemed to be of particularly high priority. Policies need to be designed to meet those goals, a characteristic also lacking in the current debate. As importantly, let’s be more aware of possible unintended adverse consequences of policies and practices and try very hard to avoid them. That’s a map for the road we should be taking.
In the 1960s and 1970s, Martin Trow developed a topology based on participation rates to distinguish among elite, mass, and universal higher education systems that is still used today. See, for example, Martin Trow, “From Mass Higher Education to Universal Access: The American Advantage,” in ed. Philip Altbach, Patricia Gumport, and D. Bruce Johnstone, In Defense of American Higher Education (Baltimore, MD: Johns Hopkins Press, 2001).


Comparing U.S. participation to that in other countries is difficult because the OECD measures participation rates differently than looking at the progression of high school graduates. The OECD enrollment ratio uses population figures in its denominator and only counts students currently enrolled (excluding those in the age group who have graduated or are no longer enrolled) and includes international students in the numerator but not the denominator (although this is being addressed in recent data sets). See discussion on enrollment ratios in OECD, Education at a Glance 2010, pp. 292-303.


The OECD publishes two measures relating to how many students complete a higher education degree completion. One – graduation rates - is a synthetic measure that divides the number of graduates in a given year by the population of the relevant age group in that year. It is really more a bad measure of attainment than degree completion and should not be relied upon for international comparisons. The other OECD measure – completion rates – compares the results of longitudinal surveys conducted in various OECD countries. On this measure, the U.S. ranks slightly below average among OECD countries. For more detail, see OECD, Education at a Glance 2010, pp. 58-80.


7 For example, Governor Chris Gregoire of Washington State writes in the introduction of NGA’s 2010 Complete to Compete to “enlist the help of all governors to make our nation a global leader in college completion.” Available online at http://www.subnet.nga.org/ci.

8 For example, a August 9, 2010 White House briefing document, “Restoring America’s Leadership in Higher Education,” states that America must raise its college completion rate from 40 percent to 60 percent when it meant to say attainment rates.

9 Information on the Bologna process can be found at its official website, http://www.ehea.org.

10 Cliff Adelman has been particularly forceful in calling attention to the importance of demographics in explaining trends in attainment and completion rate. See, for example, Clifford Adelman, Spaces Between the Numbers (Washington, DC: Institute for Higher Education Policy, 2009).


13 Canada’s high ranking for sub-bachelor’s degree attainment may also be a function of its labor force surveys that count some short-term certificate holders as sub-bachelor’s degree recipients unlike U.S. labor force surveys which do not include them as degree holders. Thus is the U.S. surveys were conducted in the same manner as Canada’s, the gap between American and Canadian attainment rates would narrow, perhaps considerably.


17 Since data on attainment rates for sub-bachelor’s degrees have only been systematically collected since 1990 in both the U.S. and in many OECD countries, historical trends in the attainment rates of sub-bachelor’s degrees and above are only presented since 1990.

18 OECD documents and presentations use the difference in attainment rates by age group as an indicator of growth in attainment rates. See, for example, discussion in OECD, Education at a Glance 2010, p. 26.

19 Two recent examples of this assertion can be found in NGA, Complete to Compete, available online at http://www.nga.org, and Complete College America, “The Completion Shortfall,” available online at http://completecollege.org/completion_shortfall/.

20 President Barack Obama, Speech to Congress, February 24, 2009.


22 One of the two supply-side chapters was written by David Longanecker who examined the different strategies states were taking and could take to increase institutional incentives. The other supply-side chapter was written by me and argued, among other things, that at least a portion of state and federal funding formulas should be based on the number of low-income students who graduated from those institutions. Both of these chapters to some extent grew out of a series of conversations that occurred in the late 1990s between higher education leaders and analysts in the U.K. and the U.S., most especially a session in Colorado Springs in 1999 that focused on funding mechanisms. David Longanecker, “ Financing Tied to Postsecondary Outcomes: Examples of States,” pp.113-122, and Arthur M. Hauptman, “Using Institutional Incentives to Improve Student Performance,” pp. 123-133 in Double the Numbers, op cit.

23 NCHEMS has provided statistical support to a number of organizations on the issues of participation, completion and attainment patterns in the states. A recent example of this kind of analysis is Dennis Jones, “Defining Attainment & Policy Responses to Improve Performance,” paper presented in Charlottesville, VA, December 6, 2010, available online at http://www.nchems.org/pubs/docs.

24 Travis Reindl, Hitting Home (Boston, MA: Jobs for the Future, 2007).


28 National Center for Public Policy and Higher Education, Measuring Up 2008


31 National Governors Association, Complete College (2010).


34 Details of the Louisiana program can be found at http://www.regents.state.la.us.

35 For further discussion of the adverse effects of K-12 goal setting see Ravitch, op cit, p. 31 and p.102, where she writes “the most toxic flaw in NCLB was its legislative command that all students in every school must be proficient in reading and mathematics by 2014.”
36 Figure 2 uses an estimate of sub-bachelor’s rates for the years preceding 1990 when the statistic was not regularly kept. Estimate is based on workers with one to three years of college which have been kept regularly by the Bureau of the Census since the 1950s. Bureau of the Census, Table A-1.

37 There is evidence that in Canada, which has the highest overall attainment rate, some certificate holders are included as degree holders because of how the labor force survey questions are structured. Thus changing how the U.S. Census asks workers about their educational attainment could have a salutary effect on our rates and international rankings.


39 U.S. Bureau of the Census, op cit., Table A-1.

40 NCES, Digest of Education Statistics, 2009, Table 188.


48 For a further elaboration of this point, see Arthur Hauptman and Philip Nolan, “Four Budget Balancing Strategies in Higher Education,” Paper prepared for OECD/IMHE Conference (September 2010).


50 Arthur M. Hauptman and Young Kim, Cost, Commitment and Attainment: An International Comparison (Washington, DC: Jobs for the Future, May 2009), Table 8, p.19.
Graduation Rates at America’s Universities:
What We Know and What We Need to Know

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At first glance, it may seem relatively straightforward to meet President Obama’s goal that “by 2020, America will once again have the highest proportion of college graduates in the world.”¹ After all, the United States led the world in educational attainment for generations. According to the most recent figures, 55- to 64-year-olds in the United States are more educated than their counterparts in every other OECD country, with a postsecondary attainment rate six points higher than the next-place countries (30 versus 24 percent).² But this dominance slowly eroded over time. Americans in the 45-54 age group were also the most educated, but only two points ahead of the Netherlands and Norway. The next youngest Americans, those ages 35 to 44, lagged only behind the Norwegians in terms of postsecondary attainment, and only by a percentage point (34 versus 33 percent).

The current generation of young Americans—those ages 25 to 34—is in a three-way tie for seventh place among the OECD countries, with an attainment rate fully ten percentage points behind Norway, the world leader (31 versus 41 percent). There are five countries with attainment rates only one or two points lower than the U.S., all of which have made substantial gains in recent years. Most notable is Poland, which in less than a generation increased the share of its population with a college education from 18 to 30 percent. The U.S. is one of only two out of the 30 OECD countries that has fewer college graduates among its 25- to 34-year-olds than among the 35-44 age group.

The U.S. has not only lost its dominant position in the world—our stagnation coupled with the rapid progress being made by other countries means that we are quickly slipping towards the bottom of the list. In order to meet President Obama’s goal, in a single decade the U.S. would need to reverse the current trend and increase the share of young people that earn college degrees by at least one third and perhaps by one half or more, from its current level of 31
percent. Such an increase is not unprecedented—bachelor’s degree attainment increased by approximately this amount from the late 1960s to the late 1970s, although on a substantially smaller initial rate of 15-20 percent, as shown in Figure 1. There were also steady (albeit more modest) gains from the late 1980s to the late 1990s, when BA attainment rose from 22 percent to its current level of about 30 percent.

Figure 1 also shows that only about half of Americans age 25-29 that start college earn a bachelor’s degree (another 15 percent earn an associate’s degree), a ratio that has remained more or less unchanged for decades. The 30 percent of Americans who start college but never finish are an obvious pool of candidates who might be converted to college graduates. The main purpose of this paper is to review what is known—and what is not known—about how institutions of higher learning might increase their graduation rates.

Figure 1. Educational attainment of 25- to 29-year-olds, 1968-2009
Colleges and universities are certainly not the only important players in efforts to increase educational attainment. The college enrollment rate in the U.S. lags behind that of several other countries, and there is surely great progress to be made in the academic preparation of students in elementary and secondary schools. Efforts to graduate more students from high school and to improve the skills of high school graduates clearly need to continue, but that does not mean that postsecondary institutions get a free pass until those efforts succeed. In this paper I will review the evidence that there are opportunities for colleges and universities to increase their productivity. Research on specific strategies aimed at improving graduation rates is much more limited, and has focused on relatively modest changes that tinker at the margins as compared to more fundamental reforms. In my view this reflects a need for more research and not a lack of opportunities for institutional improvement.

An important theme I will return to later is that improvements cannot be costly, especially in the current fiscal environment. Institutions of higher learning need to learn to do more with less—that is, they need to increase their productivity. An important new paper by Douglas N. Harris and Sara Goldrick-Rab makes the argument that proposed policies and programs need to be considered in terms of both their costs and their benefits. They carefully summarize a large number of studies and estimate cost-benefit ratios for each one, an exercise that I will not repeat here but one that should be conducted in every study and not left for readers to try to sort out on their own.

The primary aim of this paper is to review the lessons learned from the relatively small number of high-quality studies of the factors that shape college graduation rates and discuss some promising areas for future research. I focus mostly on institution-level factors—those that are (theoretically, at least) within the control of the institution. However, I begin with a related
but distinct question: could overall attainment be substantially improved by improving the “match” quality between students and the colleges they attend? If the answer is “no”—that is, moving some students to more selective colleges and others to less selective colleges does not improve overall attainment—should we expect colleges to be able to do better with the existing stock of students? In recent years there have been calls to fund public universities based at least in part on the number of students they graduate (rather than solely based on enrollment), but do we even know how institutions could improve their performance in response to such incentives?

**Institutional Selectivity and Student-College Match**

There is consistent, strong evidence that institutional selectivity is strongly correlated with—and causally linked to—graduation rates. Students that attend more selective institutions are more likely to graduate than students who attend less selective institutions. The simple (unadjusted) relationship between graduation rates and selectivity (as measured by average SAT/ACT scores) is depicted in Figure 2. On average, a 100-point in average SAT/ACT score is associated with a six-year graduation rate that is 11 points higher. Additionally, there is not a large amount of variation in graduation rates among institutions with similar SAT scores (that is, the data points in Figure 2 are fairly tightly clustered around a line). There simply are not many unselective institutions with high graduation rates or highly selective institutions with low graduation rates.

Of course, students that attend institutions with higher average test scores are better prepared academically (on average) and thus are more likely to graduate regardless of where they go to college. It is not possible to compare the graduation rates of students with similar test scores at different institutions using institution-level data such as the Integrated Postsecondary Education Data System (IPEDS) data on which Figure 2 is based, but my coauthors and I were
able to do exactly that using student-level data in a study of graduation rates at public universities.\textsuperscript{8} We found the same selectivity-graduation relationship, even after controlling for students’ academic preparation (test scores and high schools grades). For example, among students with a high school GPA of at least 3.5 and SAT/ACT score of at least 1200, 89 percent graduated at the most selective universities but only 59 percent of these well-qualified students graduated at the least selective universities.\textsuperscript{9}

**Figure 2. Graduation rates versus selectivity (N=1,219)**

Numerous other studies have shown that students that attend more selective schools benefit from doing so—in terms of future earnings, in addition to graduation rates—including studies that employ more rigorous quasi-experimental designs.\textsuperscript{10} Of course selectivity only varies across institutions that are selective. By definition, open access institutions cannot vary in terms of their selectivity.\textsuperscript{11} Among college-going students in a nationally representative survey, 5 percent attended nonselective four-year institutions and 38 percent attended two-year colleges (most of which are nonselective).\textsuperscript{12} It certainly matters whether a student starts at a two-year or a
four-year institution—bachelor’s-degree-seeking students who start out at two-year institutions are substantially less likely to earn that degree (or any degree, including an associate’s, for that matter) than similarly qualified students that start out at a four-year institution (even one that is not very selective). This finding holds even among students with the weakest academic credentials, who might be expected to benefit from the less demanding environment of a community college.

An important implication of the institutional effects literature is that where a student goes to college has enormous consequences for his or her chances of success at earning a degree. Recent evidence that academically talented students from low-income and less-educated families are much less likely to attend a more selective college than their more advantaged peers partly explains the troubling gaps in educational attainment by socioeconomic status that are so pervasive in the U.S. Efforts to mitigate disparities in the college choices of similarly prepared high school graduates are clearly warranted on equity grounds alone, but what impact could such programs and policies have on the overall bachelor’s degree attainment rate?

In order for policies aimed at improving college match quality to have a positive impact on overall attainment while holding the number of places at each institution constant, it would have to be the case that low-SES (socioeconomic status) students benefit more from attending a more selective college than high-SES students. This is because encouraging well-qualified students who would otherwise attend less selective institutions to attend more selective universities means that students who would otherwise have attended the more selective universities will be displaced and have to attend less selective institutions.

The evidence on this point is limited, but University of Washington economist Mark C. Long presents evidence that low-SES students benefit disproportionately from attending a higher
quality college in terms of the likelihood that they will earn a bachelor’s degree. Specifically, using data from the National Education Longitudinal Study (NELS) he finds that a one standard deviation increase in a college quality index is associated with increases in bachelor’s degree attainment of 4, 10, and 15 percentage points for high-, middle-, and low-SES students, respectively.\textsuperscript{16}

This finding suggests that a modest reshuffling of the college choice deck could improve overall attainment, but by how much? To get a rough sense of the answer to this question, I performed a simple simulation using the NELS data. First, I classified the first postsecondary institution each student attended into the following selectivity categories from Barron’s College Admissions Selector Ratings: most or highly competitive, very competitive, competitive, less competitive, and noncompetitive.\textsuperscript{17} These categories only apply to four-year institutions, so I created a separate category for students who first attended a two-year institution. Second, I sorted students according to a measure of their academic preparation and then assigned them to the type of college that they would have attended if college choices were made solely based on this measure and the share of students attending each type of college remained exactly the same.\textsuperscript{18} For example, 7.7 percent of college entrants attended a four-year college in the most or highly competitive category, so in the simulation I assigned the 7.7 percent of students with the highest values of the academic preparation index to this category.

Third, I estimate the relationship between bachelor’s degree attainment rates and the category of college attended, controlling for high school GPA and the standardized test score. I estimate this relationship separately for low-, middle-, and high-SES students in order to allow the college selectivity effect to vary.\textsuperscript{19} Finally, I predict each student’s probability of earning a bachelor’s degree if they had attended a college in the selectivity category determined only by
their academic qualifications. \textsuperscript{20} The average of this probability is the simulated bachelor’s degree attainment rate in a world where students’ college-going decisions are only affected by their academic qualifications.

The results of the simulation show, as we would expect, a modest drop in disparities in bachelor’s degree attainment rates—the adjusted gap (controlling for test scores and grades) between low- and middle-SES students falls from 8 to 6 percentage points, and the gap between high- and low-SES students falls from 27 to 21 points. But the overall bachelor’s degree completion rate (among students who attended college) barely budges at all—the simulation indicates an increase of just 0.2 percentage points, from 32.8 to 33.0 percent. This small change likely results from the fact that low-SES students are disproportionately unlikely go to college at all, and even less likely to have the qualifications necessary for admission to a selective university. So while improvements can and should be made in the college choices of talented low-SES students, the pool is just not large enough to have much of an impact on the overall attainment rate. \textsuperscript{21}

This simulation is admittedly crude, but because my estimate of the simulated change in the overall attainment rate is so small, even quadrupling it (from 0.2 to 0.8 percentage points) would still yield a similar conclusion: desirable as it is to improve college match quality (particularly among disadvantaged students), this strategy likely will not yield payoffs in terms of the overall bachelor’s degree attainment rate. The numbers of affected students simply are not large enough. \textsuperscript{22}

Given that improving student-college matches appears unlikely to significantly boost the national bachelor’s degree attainment rate, a natural question to turn to is whether institutions can improve the graduation rates of the students that they are already enrolling. Is there room for
institutions to educate students better, rather than just trying to recruit better students? How much (or little) is known about strategies that boost graduation rates?

Institutional Characteristics and Policies

One interpretation of Figure 2 is that individual institutions do not have much control over their graduation rates if the characteristics of the student body are taken as fixed (and graduation requirements are not relaxed). After all, 71 percent of the variation in six-year graduation rates is explained by a single variable: the average SAT/ACT score of the entering freshmen class. Add student gender, race/ethnicity, and age and whether the university is public or private into the mix and that statistic jumps to 82 percent. The view— that institutions are doing about as well as could be expected given their student bodies—is likely incorrect for two main reasons. First, there is still a fair amount of variability in graduation rates even after controlling for these variables—the standard deviation of institutions’ divergence from their predicted graduation rates is seven percentage points. Second, interpreting the data in this way is probably misleading because measures of student body quality such as average SAT/ACT scores are strongly correlated with other institutional characteristics. For example, average test scores and instructional expenditures per full-time equivalent (FTE) student are positively correlated (r=0.84) meaning that it is not just the average quality of the student body that explains so much of the variation in graduation rates in Figure 2. Variation in how much institutions spend on student services could also shape graduation rates. Higher average SAT/ACT scores are also associated with higher expenditures per FTE on student services (r=0.37) and academic support (r=0.48). These are factors that are clearly
within the control of the institution (or the legislative body overseeing it, as in the case of many public universities).

The conundrum is that while we know that the average student is best off going to the most selective college that will admit them, the research tells us nothing about why a student is more likely to graduate from a more selective university. Is it because the other students are highly qualified and there are high expectations that students will graduate? Or is it because more selective universities also tend to spend more educating their undergraduates? Or yet some other factor that is associated with both selectivity and graduation rates?

This gap in our knowledge is partly rooted in how difficult it is to document the causal effect of a given policy or institutional characteristic with existing observational data. For instance, although it is straightforward to estimate the relationship between graduation rates and factors such as spending in various categories while holding student characteristics constant, the fact that these variables are associated with both each other and the student characteristics (not to mention unobserved differences across institutions) means that it is difficult to tease out their various causal effects. The bottom line is that it is difficult, if not impossible, to make credible inferences about the causal effects of institutional policies using traditional cross-sectional methods.

This does not mean that analyses of institution-level datasets such as IPEDS are not worthwhile. For example, a recent study used IPEDS data to examine whether certain categories of spending are more strongly associated with graduation rates than other categories. The authors found that, on average, marginal changes in student service expenditures were more strongly associated with graduation rates than were similar marginal changes in instructional expenditures, especially at less selective institutions. It is not clear that these results should be
interpreted as causal, given that they are based mainly on comparisons across institutions that may differ in other (unobserved) ways. However, these results raise several interesting questions, such as: what types of student service spending are particularly productive and what instructional expenditures are less productive? They also suggest that future research on the potential for productivity gains in higher education might benefit from focusing on less selective institutions.

One topic where studies with different methodologies have produced different results is the effectiveness of full- and part-time faculty. Two studies using institution-level data found that employing a greater share of part-time, adjunct, or non-tenure-track faculty is associated with lower graduation rates at both four-year colleges and community colleges. However, another study that used student-level data from Ohio and exploited variation in the composition of departments’ faculty over time found an apparently opposing result: adjuncts often have a small positive effect on the number of courses the student takes in a given subject, particularly in fields tied to particular occupations. These studies differ in several ways besides methodology that might explain the divergent results, including context, the level of aggregation of the data, and the outcome measures examined. But the broader point is that using methods that do not allow for strong causal inferences coupled with data at a high level of aggregation make it difficult to make specific policy recommendations. For example, the results of the Ohio study might justify hiring more adjuncts in certain fields but such a precise course of action could not be drawn from either of the two studies that used institution-level data.

There are a handful of rigorous (experimental or quasi-experimental) studies on three general types of policies that might affect graduation rates: pricing and financial aid, student
support services, and remediation. I will briefly review some of the key lessons that emerge from these studies, without any presumption of being comprehensive.

It is not surprising that increasing grant aid (that is, reducing the cost of college) causes more students, particularly those from low-income families, to enroll in and complete college.\textsuperscript{29} But marginal changes in costs are just one part of the college dropout story, and not a large one perhaps due to existing aid programs such as Federal Pell grants. Even programs that make college free have no more than a modest impact on graduation rates.\textsuperscript{30} A less obvious lesson than “money matters, but not enough to solve the dropout problem” is that the way that aid is provided can matter just as much as, if not more than, the amount that is provided. A recent randomized experiment showed that helping lower income families complete the Free Application for Federal Student Aid (FAFSA) increased the odds that their children would enroll in college the following fall, suggesting that the sheer difficulty of filling out the FAFSA was an impediment to families eligible for need-based aid.\textsuperscript{31} An evaluation of West Virginia’s PROMISE scholarship program, which only provides aid to students as long as they maintain a full-time course load, found that this policy not only increased bachelor’s degree attainment but also decreased time-to-degree.\textsuperscript{32}

Studies of student support services have found that these programs often are most effective when coupled with financial incentives. A large Canadian university offered students support services or financial incentives for earning a target GPA, or a combination of both as part of a randomized experiment (which also included a control group). Neither the support services nor the financial incentives had consistently positive effect in isolation, but the combined treatment had a positive effect on the academic outcomes of women (but not men).\textsuperscript{33}
Elements of this program were also part of MDRC’s Opening Doors initiative, a randomized experiment conducted at six community colleges. On top of receiving services and additional financial aid (which was often tied to behaviors such as making use of services or earning a certain GPA), students were part of “learning communities”—small groups of entering students that took classes together. The results from many of the campuses were promising. For example, program participants in New Orleans (who, in addition to participating in learning communities, were offered $1,000 per semester if they enrolled at least half-time and maintained a C average) were 18 percentage points more likely to remain enrolled the following semester.\textsuperscript{34}

The final area where there are multiple high-quality studies is remediation, whereby students deemed academically underprepared for college are encouraged or required to take supplementary courses (without receiving college credit) before they begin college-level work. Two studies, one of community colleges in Florida and the other of both two- and four-year colleges in Texas, measure the causal effect of remediation by comparing students right around the cut score in the exam used to place students in remedial courses.\textsuperscript{35} It is more or less random which students score just above the cutoff (and thus are not placed in remedial courses) and which students score just below the cutoff (and are placed in remedial courses as a result). As a result, the causal effect of remediation can be calculated as the average difference in college outcomes between students just above and just below the cutoff. Both studies find few benefits of remediation, and some evidence of negative effects (perhaps resulting from students being discouraged by having to take remedial courses).\textsuperscript{36}
What We Need to Know

So what do we know about successful strategies for improving graduation rates? A relatively small number of high-quality studies yield credible evidence about the effectiveness of a handful of policies, such as financial aid, student support services, and remediation. More generous aid that is better targeted (and tied to academic progress) has positive effects, as do student support services coupled with financial incentives. Remediation probably has few positive effects, and may have some negative effects, despite being quite costly.

Based on this evidence, a university might reallocate some resources away from remediation and toward incentive-based aid and student services. Such an approach might well make a difference, but it is hard to imagine that tinkering at the margins is going to result in substantial increases in graduation rates. And costly policies that require an increase in overall spending are going to be extremely difficult pursue in the near future, as institutions continue to weather the recent economic recession. In the words of Harvard education professor and Gates Foundation official Thomas J. Kane, “public higher education must learn to do more with less…we must fundamentally rethink the function, pricing, and operation of public colleges.”

It seems obvious that fundamental reform is needed, but of exactly what type should it take? The disappointing conclusion of this paper is that we don’t really know, but that does not mean that there aren’t ideas worthy of further investigation. In the remainder of this paper, I will discuss some promising possibilities, focusing on strategies aimed at improving the quality of instruction. It seems reasonable to expect that improvements in the quality of undergraduate education will lead to students persisting and graduating at higher rates, and strategies focused on quality have the added benefit of mitigating concerns that pressure to increase graduation
rates will lead universities to lower their standards in order to graduate more students (but without a commensurate increase in what students have actually learned).

One of the most promising strategies to increase productivity in higher education is to leverage recent advances in information technology to deliver higher-quality instruction at a lower cost. There is certainly a great deal of variation in the quality of computer-based courses, so this is an area where attention to quality is particularly important. Simply taking existing course materials and putting them online is unlikely to increase productivity, and one recent randomized experiment demonstrated that such a crude form of online instruction may be less effective than traditional modes of instruction.\(^{38}\)

But a sophisticated course that is primarily computer-based can have substantial advantages. Each student can learn at her own pace, and built-in feedback loops can identify the areas where the student is proficient as well as areas where she needs additional help. This information can be instantaneously provided to both the student as he goes through the course and to instructors, most of whom previously had little information about how well their students were learning the course material until after the first exam. Studies of the sophisticated courses developed by the Open Learning Initiative at Carnegie Mellon University have found these courses to produce outcomes at least as good as traditional face-to-face learning, although more evidence is needed before such courses can be taken to scale.\(^{39}\) It is relatively straightforward (albeit logistically challenging) to test the effectiveness of specific online courses by randomly assigning students to either the face-to-face or online version of the same course and then comparing their learning outcomes (such as scores on a common final exam). It is also important to collect data on the relative costs of the two modes of instruction, as a reduction in costs would imply an increase in productivity even in the absence of an increase in learning.
The greatest productivity gains can be realized from computer-based learning only if the substantial cost of developing high-quality courses is shared by many institutions. A campus-by-campus approach is unlikely to yield real cost savings, especially in the short run. An added benefit to standardizing certain large introductory courses across campuses (particularly within large state systems) is the reduction of barriers to transferring between campuses, as many students do. This issue is particularly salient at community colleges, where the use of computer-based courses that are also used at four-year institutions would smooth the transition between sectors for BA-seeking students that start at two-year schools. Online courses also have obvious appeal for use as part of remediation programs that could be made available to students before they arrive on campus for their first year of college.

This potential innovation has obvious applications at traditional brick-and-mortar colleges and universities, which could replace some traditional face-to-face large lecture courses with high-quality computer-based versions that are offered online. Such online courses would be taught in a fundamentally different way from other courses at the same institution, but they would still be part of the same credit-hour based system and could have a face-to-face component such as weekly question and answer sessions with a teaching assistant. Online courses without an in-person component could be offered to students who did not live near the institution, but those students would still need to earn a certain number of credit hours in order to graduate with a degree.

But one can also imagine a more radical shift in which progress towards a degree would be measured by knowledge acquired by the student rather than the number of credit hours worth of courses a student completed. In theory such a self-paced, competency-based system could be applied at residential or commuter campuses, but it has the most obvious appeal for degrees that
are offered entirely online and thus for whom the credit hour (which was historically roughly based on the amount of time a student spent in class) doesn’t make much sense.\textsuperscript{40} Students that needed twice the normal amount of time to successfully complete a course would not be lost in a class that moved too quickly, and students that could learn the material in half the normal time could breeze through and move on to more advanced courses. Self-pacing would be particularly advantageous to older students trying to balance their studies with work and family responsibilities (in 2007-08, 40 percent of undergraduates in the U.S. were 24 or older, with more than half of these students age 30 or above).\textsuperscript{41}

Quality control would be crucial to the success of this idea, as made clear by the existence of “diploma mills” that promise degrees in exchange for evidence of life experience (and tuition payments!). It would also be desirable to have some way of ensuring that the person completing the online courses is the same person awarded the degree. Clearly much more evidence is needed before such a fundamental shift should be pursued on a large scale. For example, researchers might examine the completion rates of students in entirely online programs and the economic returns to degrees earned in this way. An important task for researchers is to identify the most promising versions of this innovation and then rigorously evaluate how well they work, so that they might be replicated if found successful. Identifying programs that appear ill-conceived from the outset and then showing that they are ineffective is much less useful.

Instruction that is primarily computer-based may well make sense for certain courses or even entire degree programs—but what about courses that are best taught in the traditional face-to-face manner? Presumably students would benefit from an increase in the quality of their instructors, but is such an increase possible? Currently very little systematic direct evidence is available as to the quality of undergraduate instruction. There is some research on the relative
quality of different types of instructors, such as adjuncts compared to tenure-track faculty (as discussed above), but there could well be enormous variation in quality within each type of instructor. There is an obvious parallel to elementary and secondary education, where research has found that there are few differences in average quality between teachers with different observable characteristics (such as whether and how they were certified), but large differences among teachers with similar characteristics.\textsuperscript{42}

Large differences in instructor quality in higher education, if they exist, would imply the existence of opportunities to improve undergraduate instruction by selectively retaining the superior instructors or improving the quality of the inferior teachers. Measuring instructor quality would be a challenging task, as it would require access to student-instructor matched data with consistent outcome data for students taught by different instructors. However, data constraints may relax as state-level longitudinal systems proliferate. Currently the only rigorous study of postsecondary instructor quality uses data from the U.S. Air Force Academy, an atypical institution in American higher education.\textsuperscript{43}

If there are opportunities to improve undergraduate education by increasing the quality of instruction, would the incentives currently embedded in the higher education system permit the realization of such gains? Or would the dual mission of many institutions to both teach and produce research complicate any such efforts? Once again, the possibility of competing interests of students and employees echoes debates in K-12 education. Might some of the ideas embedded in reforms currently being experimented with in the nation’s public schools also hold promise for higher education? For example, one might compare those who blame low college graduation rates on poorly prepared students with those who blame the poor academic performance of elementary and secondary students on their families and larger social problems.
Of course educational institutions at all levels are affected by forces larger than themselves, but the important question is whether they can do better even in the face of factors beyond their control. The stellar performance of some “no excuses” charter elementary and secondary schools suggests that they can. One might well imagine the creation of an undergraduate college aimed at taking underprepared students and providing them with a high-quality education—making up for past deficiencies if need be.

These types of questions clearly cannot be adequately covered in a single brief review piece such as the present one. And there are certainly many other proposals worthy of consideration, such as creating stronger incentives for students to finish college in four years (rather than five or six) and tying the funding of public institutions to the number of graduates produced instead of the number of students enrolled. My primary aim in this section is not to cover every one of these proposals, but rather to illustrate the types of larger questions that institutions and their critical friends in the research community need to consider if real progress is going to be made on the graduation rate issue.

One general principle worth keeping in mind is that different contexts call for different programs and policies—the steps a flagship public university should take to improve its graduation rate should not necessarily be pursued by the nearby community college. As obvious as this may seem, one often sees common practices across higher education that should not be so common. For example, the SAT was created at the behest of a 1930s-era Harvard president with the goal of identifying promising candidates for admission to Harvard. To this day, students’ scores on the SAT remain a reasonable predictor (in combination with other factors) of how well they will do at places like Harvard. But SAT and ACT scores are a poor predictor of graduation rates at institutions outside of the most elite publics and privates—that is, the institutions
attended by most students in this country. Why then are SAT and ACT scores used at so many places where they appear to add so little value?

Are there other policies and practices of the small number of elite research-intensive institutions—faculty tenure and the importance of research productivity in the faculty hiring and tenure review process, to name two candidates—that have trickled down, perhaps to ill effect, to the institutions whose primary mission is to educate undergraduates? Returning briefly to the question of instructor quality, does it make sense for less selective institutions to hire the cast-off PhDs of the more elite institutions instead of recruiting individuals who are passionate about teaching undergraduates?

Clearly there is no shortage of questions for researchers to tackle, even if many of the most important questions are also the most challenging. Additionally, the urgency that many feel to improve educational attainment will not wait for the results of carefully conducted studies, so lessons may be learned from steps (or missteps) taken in the absence of hard evidence. For this to happen, individual institutions and state higher education systems must be willing to allow researchers to track student outcomes. Several states systems already have longitudinal databases that allow for such research, including the incredibly detailed data system in Ohio that has been used in several important studies by economists Eric Bettinger and Bridget Terry Long.

The federal government as well as its counterparts in the states can help sustain this trend by funding (if not mandating) the development and maintenance of such databases, the best of which link records from postsecondary institutions to other sources such as the state’s K-12 education database, the National Student Clearinghouse (to track transfer to private and out-of-state institutions), state unemployment insurance records (to track the subsequent earnings of college graduates and dropouts), and other sources of data on students’ later-life outcomes.
The federal Department of Education also plays an important role in the support of research by providing funding through its Institute of Education Sciences (IES). However, of its 15 research grant programs, only one is devoted specifically to postsecondary education (several others are aimed solely at K-12 education). Likewise, higher education is not included in the “What Works Clearinghouse,” an IES-created effort to identify rigorous education research and make the results readily available to educators, policy makers, and the public.

In addition to increased commitments to higher education research through its current programs, the federal government might also play a more active role in postsecondary R&D by funding experimentation at individual campuses. In a recent paper, Dominic Brewer and William Tierney propose a competitive proposal process designed to encourage “traditional higher education institutions to develop and test operational innovations.” Successful innovations that confer a competitive advantage on the institutions that adopt them might then spread on their own to other campuses (perhaps including previously recalcitrant ones).

Conclusion

America’s institutions of higher learning cannot drastically increase the level of educational attainment in the country on their own. College students need to arrive on campus better prepared academically, and more students need to graduate high school with the skills needed to attend college at all. But the poor preparation of many college students should not be used as an excuse for poor graduation rates. At many institutions, even students with impressive high school grades and test scores graduate at mediocre rates. Data points like this one make it clear that institutions can do better with their current students, without lowering academic standards. The research community has a vital role to play in identifying promising strategies for
improvement and evaluating the efforts of institutions seeking to better fulfill their mission of educating undergraduates.

2 The statistics reported in this paragraph and the next are drawn from Organisation for Economic Co-operation and Development, *Education at a Glance 2010: OECD Indicators* (Paris: Organisation for Economic Co-operation and Development, 2002), Table A1.3a, columns labeled “Tertiary-type A and Advanced research programmes.” According to the OECD glossary, “Tertiary-type A programmes have a minimum cumulative theoretical duration (at tertiary level) of three years’ full-time equivalent, although they typically last four or more years.” Available at http://stats.oecd.org/glossary/detail.asp?ID=5440.

3 If Norway stagnates at 41 percent, then the U.S. needs to increase attainment by about one third. If Norway increases its attainment rate to 45 percent, then the U.S. needs to increase attainment by about half.

4 The largest recorded 10-year increase in both relative and absolute terms was 1968-1978, when the BA attainment rate increased by 9 percentage points, from 15 to 23 percent (a 58 percent increase).

5 Whereas the U.S. tied for seventh place among OECD countries in postsecondary attainment, we rank 12th in terms of college access rates; see Organisation for Economic Co-operation and Development, *Education at a Glance 2010: OECD Indicators* (Paris: Organisation for Economic Co-operation and Development, 2002), Table A2.3. Countries where more than 64 percent (the U.S. rate) of citizens enroll in college include Norway (71 percent) and Poland (83 percent); For a recent international comparison of student achievement, see Eric A. Hanushek, Paul E. Peterson, and Ludger Woessmann, *U.S. Math Performance in Global Perspective: How Well Does Each State Do at Producing High-Achieving Students?* Program on Education Policy and Governance Report, No. 10-19 (Cambridge, MA: Harvard University, 2010).


7 This figure, which is based on Integrated Postsecondary Education Data System (IPEDS) data from 2007-08 compiled by the Delta Cost Project, only includes four-year colleges and universities that reported both six-year graduation rates and average SAT/ACT scores and enrolled at least 100 first-time, full-time freshmen. Average SAT/ACT score is calculated based on the test taken by the greatest share of students (averaging the 25th and 75th percentiles), with ACT scores converted to the SAT scale. Institutions where fewer than 50 percent of students took the SAT or the ACT are excluded.


10 See Caroline M. Hoxby, “The Changing Selectivity of American Colleges,” *Journal of Economic Perspectives* 23, no. 4 (Fall 2009) for a brief summary of some of these studies. The one oft-cited exception is a study that compared the earnings of students who were accepted to a similar set of schools but attended different schools, and found no selectivity effect (except among low-income students) (see Stacy Berg Dale and Alan B. Krueger, “Estimating the Payoff to Attending a More Selective College: An Application of Selection on Observables and Unobservables,” *Quarterly Journal of Economics* 117, no. 4 (November 2002).). However, the range of selectivity of the institutions included in that study is extremely limited, and the results are only based on students who applied to a similar set of schools and thus do not reflect the large amount of variation in college choices that results from student decisions about where to apply.

11 Non-selective institutions can vary in terms of the average quality of their students. However, it is often difficult to measure such variation since most non-selective institutions do not require or record admissions data such as students’ SAT/ACT scores.
Author’s calculations from the National Education Longitudinal Study (NELS).


Mark C. Long, “Changes in the Returns to Education and College Quality,” Economics of Education Review 29, no. 3 (June 2010), Table 4.

I did not classify students who attended an institution in the “special” category or a four-year institution for which the Barron’s rating was not available.

Specifically, I estimated an academic preparation index for each student based on their high school GPA and score on a standardized test administered in the 12th grade as part of the NELS study as the linear predictions from an ordered probit regression of the college category variable on high school GPA and the standardized test score. I use the standardized test score instead of SAT/ACT scores because the SAT/ACT is only taken by a self-selected sample of students. For students for whom a 12th-grade standardized test score was not available, I predicted a score using the results from a similar test administered in the 10th grade. All analyses using the NELS data are weighted using the appropriate survey weights.

I estimate these relationship using probit regressions. I define low-SES students as those from families in the bottom half of the income distribution where neither parent earned a college degree, high-SES students as those from families in the top half of the income distribution where at least one parent earned a college degree, and middle-SES students as all other students. I also estimate this relationship separately for students for whom data on SES are missing.

Students who did not attend any college (or attended a college that was not included in one of the selectivity categories) are assigned their actual bachelor’s degree attainment.

This simulation admittedly makes a number of potentially faulty assumptions. A simple regression analysis is unlikely to yield accurate estimates of the causal relationship between college selectivity and bachelor’s degree attainment. The college selectivity categories likely miss a good amount of variation in college characteristics within each of these categories. And there may well be general equilibrium effects from resorting large numbers of students, which would not be reflected in my analysis.

It could well be that a more ambitious re-engineering of the college match process (for example, one that gave admission preferences to low-SES students at selective universities) could boost overall attainment rates, but such a thought experiment is beyond the scope of this paper. I did run an additional simulation where I increased the shares of students attending most, highly, and very competitive colleges by 20 percent, kept the shares of students attending non-competitive and two-year colleges the same, and allocated the remaining students to competitive and less-competitive colleges in proportion to the original shares in those categories. In other words, I simulated an increase in the number of available spaces at the more selective colleges and a decrease in the number of spaces at less selective (but not open enrollment) four-year colleges. Students were still assigned to colleges based purely on their grades and test scores. This reallocation of spaces only increased the simulated bachelor’s degree attainment rate by an additional 0.2 percentage points, to 33.2 percent.

These statistics are r-squared values from linear regressions that are weighted by student full-time equivalent (FTE) enrollment. The unweighted statistics are 65 and 73 percent.
This figure is based only on four-year institutions that report average SAT/ACT scores. The variation among two-year and nonselective four-year institutions could be larger or smaller.


The authors technically use panel data but do not take advantage of the panel structure of the data using methods such as fixed effects because, they argue, there is not enough variation in spending within institutions over the four cohorts covered by their panel.


Another reasonably high-quality study (Eric P. Bettinger and Bridget Terry Long, “Addressing the Needs of Underprepared Students in Higher Education: Does College Remediation Work?” *Journal of Human Resources* 44, no. 3 (Summer 2009)) finds evidence that students in remediation have higher persistence rates than non-remediated students. However, the identifying assumption made in this paper (that distance to the nearest college only affects student outcomes through the remediation policies at that college) is a stronger assumption than the assumption made by the regression discontinuity analyses.


40 One example of such a competency-based, entirely online university is Western Governor’s University, which was founded by the governors of 19 states. Available online at http://www.wgu.edu/about_WGU/overview.


42 See, for example, Thomas J. Kane, Jonah E. Rockoff, and Douglas O. Stagier, “What Does Certification Tell Us About Teacher Effectiveness? Evidence from New York City,” Economics of Education Review 27, no. 6 (December 2008).


44 See, for example, Caroline M. Hoxby, Sonali Murarka, and Jenny Kang, How New York City’s Charter Schools Affect Achievement (Cambridge, MA: New York City Charter Schools Evaluation Project, 2009).


46 List of grant programs (with links to their descriptions) available online at http://ies.ed.gov/funding/ncer_progs.asp.


Remediation: The Challenges of Helping Underprepared Students

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Introduction

Although nearly three-quarters of high school graduates eventually go on to higher education, many are not prepared for college-level material. Research suggests that only 32 percent of all students leave high school ready to study college-level material, and the proportion academically prepared for higher education is even smaller among Black and Hispanic students (20 percent and 16 percent, respectively). Given academic preparation is an important predictor of success in college, these students are often placed into remedial or developmental courses. The classes are designed to address academic deficiencies and prepare student for subsequent college success. Estimates suggest that one-third or more of first-year students are required to take remedial courses in reading, writing, or mathematics.

While remediation plays an increasingly important role in higher education, surprisingly little is understood about the effects of remediation on student outcomes and how to make the courses effective. There are also growing debates about how to best offer and regulate the courses. Perhaps due to a lack of best practices, states vary widely in where they offer and how they handle remedial and developmental programs. As many states and institutions look for cost-effective ways to deal with the increasing numbers of under-prepared students who enter higher education each year, many are considering ways to limit remediation, shift its location, or pass on its costs to students or high school districts. For example, at least eight states, including Florida and Illinois, restrict remediation to two-year institutions, and several other states are currently considering such policies. States such as Texas, Tennessee, and Utah have imposed or are considering limits on the government funding of remedial coursework. States are also implementing various policies in the effort to help students avoid college remediation.
This chapter aims to first summarize the basic facts about remediation—the students who need it, how it is organized, and how much it costs. Then, I will discuss the major debates surrounding remediation before reviewing the research on what is known about the effects of remediation on student outcomes. Finally, the chapter will consider how to make remediation work based on current research on reforming and improving remediation programs. Overall, the chapter addresses how reforming remediation might facilitate the national goal to increase degree attainment.

Basic Facts About Remediation

The Students

During the 20th century, the increased demand for higher education by students from all backgrounds accelerated the need for remediation in higher education. According to a 1996 study by NCES, by 1995, 81 percent of public four-year colleges and 100 percent of two-year colleges offered remediation. The increasing numbers of students entering colleges unprepared for college-level material is reflected in the growing numbers required to take remedial courses. According to a 1997 NCES study, 39 percent of colleges surveyed reported that remedial enrollments had increased during the last five years. Other colleges choose to expel rather than educate students with severe academic deficiencies. For instance, during the fall of 2001, the California State University system “kicked out more than 2,200 students – nearly 7 percent of the freshman class – for failing to master basic English and math skills.”

The first major group of students in remedial education is under-prepared recent high school graduates, many of whom exit secondary school without grade-level competency or the proper preparation for college-level material. The need for remediation in college is closely tied
to a student’s high school curriculum. A 2002 study by the Ohio Board of Regents found that students who had completed an academic core curriculum in high school were half as likely to need remediation in college compared to students without this core. Similarly, studies by Cliff Adelman emphasize the importance of academic preparation in high school for success in college. However, completion of a high school core curriculum does not ensure that a student will avoid remediation in college. Many students who complete upper-level math courses in high school still require math remediation courses or need to repeat subjects in college. The need for students who are supposedly “academically prepared” to take remediation suggests that the problem is larger than just poor high school course selection or the lack of a college-prep curriculum at some schools. High school rigor is certainly a concern. Additionally, misalignment between the material defined as necessary by high schools and the competencies colleges require has been well documented.

In addition to recent high school graduates, a substantial number of adult students enroll in developmental courses. Many of these workers were displaced by structural shifts in the labor market and seek developmental courses to acquire the skills necessary for re-employment. Others are often recent immigrants or welfare recipients. Nationally, about 27 percent of remedial students were over the age of 30.

*The Colleges: The Organization and Delivery of Remedial Education*

The purpose of remedial education in most college systems is to provide under-prepared students the skills necessary to complete and succeed in college. In addition, remediation may serve several institutional needs. First, it allows colleges to offer access to growing numbers of students. It also provides individual departments the ability to generate enrollment, particularly
in English and Math departments. Moreover, by separating weaker students into remedial courses, remediation allows colleges to protect institutional selectivity, regulate entry to upper level courses, and maintain the research functions of the college. Finally, remediation may serve as a tool to integrate students into the school population.\textsuperscript{11} The bulk of remediation is provided by non-selective public institutions, the point of entry for 80 percent of four-year students and virtually all two-year students. At some colleges, remedial courses are offered institution-wide while others have the courses housed in individual departments. Another option for institutions and states is to outsource the remediation. Maryland and New York allowed some experimentation with the contracting of private vendors, such as companies like Kaplan and Sylvan, but the outsourcing market has changed from teaching classes to instead offering software and other teaching aids for remedial education.\textsuperscript{12}

Because the average college student attends a nonselective institution to which he or she is almost assured admission, the remediation placement exam taken when first arriving on campus has become the key academic gate-keeper to postsecondary study. As Kirst notes, since admission is virtually certain, students' first hurdle is their placement test. Nationally, the most widely used placement exams are the Computerized Adaptive Placement Assessment and Support Systems (COMPASS) and the Assessment of Skills for Successful Entry and Transfer (ASSET), each published by the ACT, Inc., and the ACCUPLACER, developed by the College Board. The tests consist of a variety of items that measure students’ skill level. For example, the ASSET exam is a written test with as many as 12 subsections, including in-depth assessment of students’ writing, numerical, and reading skills. While most students are identified using placement exams in reading, writing, and mathematics, some schools also use standardized test scores and high school transcripts to make assignments. After taking the placement exam,
colleges assign students to a specific math course, oftentimes a remedial course, based on their scores. Typically, administrators make these designations based on “hard” cutoffs—students scoring below a given threshold are assigned to a remedial course.

Placement into math remediation is more common than placement into English (i.e. reading and/or writing) remediation, but participation in English remediation may be more serious as some evidence suggests that reading and writing deficiencies have more negative effects on a student’s success. Remedial courses are often the gateway for students to enroll in upper level courses. About two-thirds of campuses nationally restrict enrollment in some classes until remediation is complete, and most schools prohibit students from taking college-level courses in the same subject area until remediation is complete. Some go even farther by barring students from taking any college-level work while enrolled in remediation. This requirement may restrict students’ class schedules, and to the extent that remediation affects the classes that students can take, it may also discourage students from focusing on certain majors.

For example, some majors are extremely demanding in terms of required credit hours and have little leeway for students to enroll in non-required classes. A student in remediation may have to take one or two semesters worth of preparatory classes before they start the courses for a major. On the one hand, this rigidity may just increase the time to graduation; however, it could also discourage certain majors. While most colleges and universities offer academic credit for remedial courses, most do not allow remedial credits to count toward degree completion. Campuses also vary in the extent to which they require versus suggest that under-prepared students enroll in remedial or developmental work.
The Costs of Remediation

The true total cost of remediation is unknown, but some national estimates suggest an annual cost of over $2 billion. In 2006, the Alliance for Excellent Education concluded that the cost of remediation was $2.8 billion, half of this in the form of direct costs and half in term of what the nation loses in terms of lost earning potential due to remedial students being more likely to drop out of college without a degree. The lack of a clear number is due to the fact that most states have little data from which to give accurate assessments. However, a few states have studied this issue. Ohio provides a more detailed case study of the costs of providing remediation in one state. In 2000, Ohio public colleges spent approximately $15 million teaching 260,000 credit hours of high school-level courses to freshman; another $8.4 million was spent on older students. These figures only take into account state subsidies as Ohio offers instructional subsidies for courses granting academic credit. However, there are additional costs associated with items such as tuition expenditures, financial aid resources, and lost wages are not included in this estimate. The cost of remediation for the 20,000 freshman in the state amounted to an additional $15 million in tuition.

Texas also provides estimates of the cost of remediation at its public higher education institutions. The Texas legislature appropriated $206 million in general revenue funds for the instructional costs of developmental education, not including private colleges and universities. The cost per semester credit hour varied by institution type. The Legislative Budget Board found that the average cost per credit hour was $256 at Texas public universities, $152 at Texas public community colleges, and $189 at Texas State Technical Colleges. Along with the direct costs of remediation, a 2005 study by Hammons estimates that Texas loses over $13.6 billion annually
in lower earnings potential, poor worker productivity, and increased spending on social programs.\textsuperscript{18}

While remediation is expensive, it may be relatively less expensive to provide than other college courses. According to a 1998 study by the Arkansas Department of Higher Education, remedial education is less costly than or approximately the same as core academic programs. An analysis of expenditure data in 1996-97 found that the direct and indirect costs per full-time equivalent (FTE) student were $7,381 for remediation at four-year colleges and $6,709 at two-year colleges.\textsuperscript{19} In comparison, the cost of core programs ranged from $7,919 to $12,369 at the four-year colleges and $6,163 to $8,235 at the two-year colleges. The two primary reasons for the cost differences were larger class sizes and the higher prevalence of adjunct, lower-paid instructors in remedial courses.\textsuperscript{20} Price Waterhouse found similar results examining the CUNY system during 1996-97, which spent $124 million on remediation that year. The cost of remediation courses was approximately one-third less than the cost of other academic courses. Two-thirds of the costs for remediation were covered by tuition and student aid with city and state funding providing for the rest.\textsuperscript{21}

While the expense associated with remediation is quite high, the social costs of not offering remediation, however, are likely to be much larger than the institutional costs of the programs. Unskilled individuals have expenses associated with them such as unemployment costs, government dependency, crime, and incarceration. Moreover, the increasing demands of the economy for more skilled workers encourages the nation to find an effective way to train its workers.
The Policy Debates

Given the significant costs of remediation, and the fact that many view the courses as double payment for skills that should have been obtained in high school, states and higher education institutions continually question whether they should cover any or all of the costs of remedial education. In their consideration of reform, however, many policy makers have focused on reducing costs rather than searching for ways to improve remedial programs. Some states have decided to limit where remediation can happen or how much students can take. This section outlines some of the major policy debates and decisions.

Where Should Remediation Happen?

One major question is who should offer remedial courses. Nearly every state has taken the responsibility to offer some kind of remediation. However, they differ in which public institutions offer the courses. While many offer remedial courses at either their two- and four-year institutions, an increasing number limit the classes to only their two-year institutions. Even among former groups, three states have some limitation imposed concerning remediation at the four-year institutions. These decisions are partly justified by the lower cost of offering courses at community colleges.

Although Florida was the first state to limit remediation at public colleges and universities to the two-year schools in 1985 (with the exception of historically black colleges), this type of policy shift has been much more visible in recent years. In particular, New York's decision to phase out most remedial education within the City University of New York's (CUNY) four-year system in 1999 generated a great deal of debate and press. Starting in 1999, students had to go through a two-step admissions process. First, they may be granted provisional
admission based on high school grades and other non-test measures. Then, the student must demonstrate “skills proficiency” with SAT scores or Regents test scores. Students who are unable to pass this second hurdle and require remediation are not accepted until they complete the remedial work at a community college and pass the CUNY/ACT Basic Skills Tests.  

More recently, states like Arizona, Florida, Montana, South Carolina, and Virginia have all decided to prohibit their in-state public universities from offering remediation education. For example, Virginia law charges that the community colleges should handle remedial education. Four-year public institutions therefore are expected to make arrangements with community colleges to handle the remediation of students accepted for admission. Private colleges are not affected by this requirement. In North Carolina, the state legislature passed a law in 2001 (which was amended in 2003) that restricted schools within the University of North Carolina (UNC) system to offer remedial education. Instead, institutions were instructed to refer students to other schools to complete their remedial coursework. Since 1992, schools within the UNC system had been allowed to enter into contracts with community colleges and others have been encouraged to do so “when it improves the cost effectiveness or educational value of remedial coursework.”  

California is another state that has moved towards concentrating remediation in the community college system. The UC system does not officially offer remedial instruction, although some UC campuses have contracted or folded their remedial classes into regular courses. However, the CSU system did offer remediation without limitations until plans were passed in 1996 with the intent of reducing the number of incoming students in need of remediation to less than ten percent. Although the original goal was to begin denying admission to a CSU campus to students who needed remedial courses in 2001, the plan was
quickly revised with a 2007 target instead. Since initiating the plan, CSU has done several things
to reduce the need for remedial education. For example, they offer more summer remedial
education programs, have tried to strengthen teacher preparation, and are attempting to set
clearer standards and communicate them to students, parents, and schools to ensure that
graduates meet university admission requirements. The goal is to require recent high-school
graduates to demonstrate college-level skills in English and mathematics as a condition of
admission. This is part of a larger effort in California to encourage students to complete their
remediation at two-year colleges before entering the four-year system. Other states continue
to debate the possible benefits of limiting remediation at public institutions to the two-year
colleges.

With all the movement away from four-year institutions offering remediation, an
important question is what effects restricting remedial services to community colleges will have
on student outcomes. By shifting the locus of remediation, states could change enrollment
patterns, and eventual degree completion could fall as a result: research suggests community
college students do not perform as well as similar students who initially enter four-year
institutions, perhaps due to a lack of resources.

*Should States Limit or Shift the Costs of Remediation?*

There are other kinds of limitations that states and institutions could impose on the
provision of remediation. Some states limit the percentage of students who need remedial
courses that can be accepted by an institution. Other states and institutions impose limits on the
amount of time students have to complete the remediation or the number of times a student can
repeat a remedial course. Similar to limitations on where remedial courses are offered, these types of limitation could also have important implications for students.

Massachusetts is an example of a state that has chosen to limit the number of students who have remedial needs who can be admitted to a public university. In a 1998 report, the Massachusetts Board of Higher Education voiced the opinion that developmental education should be a primary function of the two-year public college and not the four-year institutions. Therefore, they imposed a five percent cap on the enrollment of freshmen in remedial courses.\(^{32}\) The cap increased to ten percent, but students above that percentage are referred to community colleges.\(^{33}\) Similarly, in Georgia, there has been some movement towards reducing the number of students in remediation, particularly within the University of Georgia system.\(^{34}\)

Some institutions and states impose time limits. For example, Texas limits both the amount of development credits that students can take and how many levels of remediation can be offered by an institution. The Texas Success Initiative states that legislative appropriations may not be used for developmental coursework taken by a student in excess of “(1) 18 semester credit hours, for a general academic teaching institution; and (2) 27 semester credit hours, for a public junior college, public technical institute, or public state college.”\(^{35}\) Other states limit the number of remedial courses that can be taken. For example, at California community colleges, there is a limit of 30 semester or 45 quarter credits of “precollegiate basic skills” courses, except for ESL students or those with “verified learning disabilities.”\(^{36}\) In Georgia, students who do not meet the minimum standards for college-level work within the University of Georgia system are placed into Learning Support classes. However, only a maximum of 12 semester hours, or three semesters (whichever occurs first), may be taken in any area. If students do not meet this requirement, they are suspended for three years, pending an appeal.\(^{37}\)
Another way states and university systems limit remediation is to not allow students to repeat remedial courses if they do not pass the first time. In Florida, for instance, in 1997, the state legislature imposed a penalty on students who enroll more than once in a remedial course. According to analysis by the Division of Community Colleges, this resulted in significantly reducing the percentage of students who retook courses. SB 1974, passed in 1999, amended the law to increase the number of times state funding would support students repeating a course to two. The current policy is that students pay the regular tuition price for the first two attempts of a remedial course. However, they must pay the full costs of instruction if they need to take the class a third time; these costs are four times the regular tuition amount.38

Efforts to limit remediation, either in where is it offered or how much is allowed, could have the effect of pressuring high school students to prepare better for college while pushing programs and college students to be more effective with their time. However, such effects are unlikely due to poor information among students, and importantly, the lack of clear evidence on how to build a successful remediation program. Therefore, while policy makers lament the problem of remediation, many of the efforts described above do little to reduce remediation rates or improve programs. Instead of moving forward the conversation on how to “fix” remediation, the policies being debated are orthogonal to the research and practice focused on identifying strategies to make remediation more effective.

The Impact of Remediation: Does It Work?

Basic Comparisons of Remedial and Non-remedial Students

Remedial classes are designed to address academic deficiencies and prepare students for subsequent college success. They may improve student persistence by teaching material not yet
mastered. In comparison, students with similar concerns who are not in remediation may never gain a sufficient academic foundation and be more likely to drop out. Remedial courses may also provide a safe environment in which students receive other kinds of support that could increase their chances of degree completion. However, there are several reasons why remedial courses may in fact have the opposite effect. By increasing the number of requirements and extending the time to a credential, remediation may lower the likelihood of degree completion. The literature also suggests that the stigma associated with remediation may also negatively impact students. Remedial courses may also be filled with negative peer effects. In contrast, similar students not placed into remediation could benefit from positive peers effects by interacting with higher-ability students in non-remedial classes.\textsuperscript{39}

While the use of remedial courses by postsecondary institutions is widespread, states and colleges know little about whether their remediation programs are successful along any dimension. Few states have exit standards for remedial courses and only a small percentage performed any systematic evaluation of their programs. One major problem has been a lack of good data, and studies that have been able to overcome the information barrier often focus on one particular institution. Moreover, most of the research on remediation simply compares students in remediation to those not in the courses. Not surprisingly, these studies find remedial students, who have less preparation, are less likely to succeed than their peers. Because students who are placed in remedial courses differ from those who are not placed into remediation, one would expect these students to be less likely to persist and complete a degree even in the absence of remediation. Therefore, one must develop a way to separate the effects of lower preparation from the effects of being placed in a remedial course. Moreover, placement in remediation might differ due to college choice, i.e. a student wishing to avoid remediation might choose a college.
with a very low placement cutoff. Placement also differs by socio-economic status as more wealthy students are more likely to retake remediation exams in order to have additional chances of passing out of the courses.\textsuperscript{40}

\textit{Does Remediation Work for Those on the Margin of Needing the Courses?}

The recent availability of new data sources has prompted several large-scale studies that attempt to address these selection problems to get to an apples-to-apples comparison of students placed in remediation to similar students not in the courses. Bettinger and Long, in 2005 and 2009 studies, use an instrumental variable strategy that combines between-college variation in remediation placement policies and the importance of distance in college choice to estimate the causal effect of remedial courses on higher education outcomes in Ohio.\textsuperscript{41} This sort of comparison is possible in that state because institutional policies regarding remediation differ across the public colleges and universities. Therefore, two students with the same characteristics face dissimilar probabilities of remediation if they attend different schools. The analysis focuses on degree-seeking, traditional-age, full-time undergraduates who initially entered a public college in fall 1998.\textsuperscript{42} Their results suggest that remedial students at Ohio colleges are more likely to persist in college and to complete a bachelor’s degree in comparison to students with similar test scores and backgrounds who were not required to take the courses.\textsuperscript{43} These results support the assertion that remediation is a way to improve the chances of degree completion.

Another way to research the effects of remediation is to use a regression discontinuity methodology. Assuming that students who score just above and below the placement cutoff have near similar ability, especially due to the noise inherent in such tests, one can obtain a causal estimate of the effects of remedial placement on subsequent outcomes for those students at the
margins of passing. Calcagno and Long, in a 2008 study, use this strategy to examine the effects of remediation in Florida. The results suggest that remediation might promote early persistence in college, but it does not necessarily help community college students make long term progress towards a degree. The impacts for math and reading remediation were positive in terms of total credits earned but no statistically significant difference was found in terms of total college-level (non-remedial) credits earned. Martorell and McFarlin, in a 2009 study, use a similar method to examine the impact of remediation in Texas. They also find that remediation had little effect on persistence and degree completion, along with a range of other educational outcomes. In addition, they find no effect on labor market earnings. Generally, their estimates are small and statistically insignificant.

The conflicting results from these studies suggest that the causal effects of remedial courses on student outcomes are mixed at best for students at the margin of passing out of remediation. However, it is puzzling that the estimated effects range so much. One reason for the differences across studies could be variation in where states locate the cutoff for placement into remediation. Another possible explanation is that each study focused on different student populations. Calcagno and Long included nearly the entire universe of first-time, degree-seeking students in Florida. Meanwhile, Bettinger and Long focused on traditional-age college students at two- and four-year public institutions, and Martorell and McFarlin limit their analysis to students who took all three placement exams (math, reading, and writing) and passed the writing section. Many educational interventions have had varying effects on students of different genders, races, and other demographic characteristics, and so it is plausible, as discussed below, that remedial courses could also have varying effects on different kinds of students.
How Do the Effects Differ by Type of Student?

Additional work by Long and Calcagno focusing on Florida indeed finds that the effects of remediation differ by student background and demographics. Women experienced more positive effects from placement into remediation than men. This finding could relate to other differences documented by gender such as learning styles, levels of engagement, or amount of study time, and this may give clues as to why remediation works for some but not others. However, the gender difference is also consistent with many other studies that have found women and girls to be more positively influenced by interventions. Women also have higher degree completion rates, but it is unclear whether remediation plays any role in this difference. It is also curious that women assigned to developmental courses failed to earn more non-remedial credits than their female counterparts not assigned, thereby suggesting again that remediation does not have an overall positive effect.

Another interesting pattern is the fact that older students placed into remediation realized more positive effects in a host of outcomes in comparison to younger students in remediation. This result could suggest that the outlook of the student is important to the potential impact of being assigned to developmental courses. If older students are more focused or ready to take advantage of “refresher” courses or the opportunity to “catch up,” then this could explain the differences in the results. It could also be the case that older students have a greater need for developmental courses because they have been out of high school for a longer period. Therefore, older students who score high enough to just barely pass out of remediation might benefit from taking the courses regardless of placement status.

Income level also appears to be related to the effectiveness of remediation. Pell Grant recipients in remediation experienced more negative outcomes in terms of persistence,
Associate’s degree completion, transfer rates, and credits earned. Because income is often highly correlated with high school quality, the underlying cause of these differences may be preparation. However, it may also be the case that affordability interacts with performance in remediation and afterwards. While these low-income students receive the Pell Grant, usually it does not cover the full costs of their educations. The patterns suggest that there should be further investigation of the interaction of financial need and experiences within and after remediation.

*How Do the Effects Differ by Level of Prior Preparation?*

The aforementioned studies were limited to focusing on students just on the margin of needing the courses, and so little is known about the effects of remediation on students with much lower levels of preparation. Research by Boatman and Long expands the literature by examining the impact of remedial and developmental courses on the academic outcomes of students with varying preparation levels. They focus on students who began at a public college or university in Tennessee in fall 2000. Due to the state’s multi-tiered system in which students could be assigned into one of four levels of math and one of three levels of reading or writing (i.e., remedial, developmental, or college-level courses), they are able to examine the effects of multiple levels of remediation, from students who need only one course to those who need several courses.

The results suggest that remedial and developmental courses do differ in their impact by the level of student preparation. Similar to some of the above studies, the largest negative effects were found for students on the margin of needing remediation: in comparison to their peers placed in college-level courses, students assigned to remedial courses were less likely to complete a college degree in six years. However, at the other end of the academic ability
spectrum, the negative effects of remediation were much smaller and sometimes positive. In the writing courses, Boatman and Long found positive effects for those placed in lower level courses. For example, students in the lowest levels of remedial writing persisted through college and attained a degree at higher rates than their peers in the next highest level course. These results suggest the effects of remediation do differ by preparation level, and more, rather than less, remediation could be beneficial for students with weaker preparation. This study, along with others, also suggests that writing (or English) remediation has more positive effects than math remediation.\textsuperscript{50}

\textit{What Else Do We Need to Know?}

The existing research suggests that the effects of remediation are far more nuanced than a single effect experienced by all students. In essence, remedial and developmental courses appear to help or hinder students differently by state, institution, background, and level of academic preparedness. Therefore, states and schools need not treat remediation as a singular policy but instead should consider it as an intervention that might vary in its impact according to student needs. The results also present an interesting puzzle about why remedial and developmental courses have such different effects. Understanding the reasons for the differences could spur some insight into how to make \textit{all} developmental and remedial courses effective. The often negative effects found for students at the margin of needing remediation may also suggest that remediation is not needed for as many students as currently placed. On the other hand, with low levels of persistence and degree completion at many colleges, institutions need to find better ways to support the academic needs of their students. It may also be the case that some colleges and universities are more successful than others in helping underprepared students due to
differences in how they offer and teach their remedial and developmental courses. Future research needs to take a more critical look to identify which institutions do the best job.

**Making Remediation Work**

The research on remediation and how to improve it is still in its infancy. Still, there are many hypotheses about how to make remediation work. There are also some promising interventions currently being implemented that could provide direction. Some focus on figuring out ways to improve instruction, give students additional supports, or accelerate the process so students are not delayed from accumulating college credits. This section considers these strategies and programs.

*What Are the Best Practices for Colleges and Universities?*

While the above results give a general sense of the impact of remediation, it may be the case that certain types of instruction and supports are more beneficial than others. Research is needed to identify which practices are the most effective in remediation programs. The literature highlights factors that *might* matter in the success of a remediation program. These factors include clearly specified goals and objects, a high degree of structure, the provision of counseling and tutoring components, and the use of a variety of approaches and methods in instruction. A more recent review of the literature confirms that little rigorous research exists to document best practices in remedial or developmental education. However, the authors conclude that the most promising strategies are to help students build their skills in high school, integrate remedial students into college-level courses, and provide opportunities for the
development of skills for the workforce. However, far more work is needed to compare the relative effectiveness of different models of delivery.

One place current reformers has focused is on the placement process itself. There is a lack of consensus of what it means to be prepared for college-level work, and as such, there are differing views of what would necessitate placing a student in a remedial or developmental course. Even when there seems to be agreement about what skills are needed for higher education, translating those benchmarks into assessments has resulted in a variety of tools. As noted above, states vary a great deal in the types of instruments used and cutoffs imposed to determine placement into remediation. It may be the case that remedial courses are more or less effective for certain parts of the testing distribution, and so the placement of the cutoff could be an important determinant of the impact of the courses.

In a 2005 report, Prince summarizes arguments for more standardized and consistent testing instruments and cutoff scores. He asserts that policies that are “more consistent and predictable” would help to “establish a common definition of academic proficiency… which could accelerate the alignment of secondary and postsecondary academic requirements and expectations and enable colleges to send clear signals to high schools about the preparation students need to be college-ready.” In addition, he argues that doing so would improve states’ ability to track and evaluate their programs. Having a mandatory policy might also help facilitate transfer as students would be able to avoid duplication and arbitrary placement if moving to another institution in the state. However, even if standardization is preferred, it is not clear which assessment(s) should be used and where the threshold for remediation should be drawn.
Other avenues for reform include how instructors are used, including adjunct faculty, and professional development for instructors. One reason remedial courses tend to be less costly than college-level classes is that the inputs are cheaper: adjunct instructors are more likely to be used than full-time faculty, and class sizes have been larger. However, some research suggests that students who have adjuncts as instructors do worse in terms of educational outcomes. Moreover, larger class sizes, especially for students with academic needs who have already had past trouble engaging with material, could be detrimental to progress. Some institutions are thinking much more deliberately about how remedial courses are offered and conducted, in terms of instruction, pedagogy, format, and size.

Using Learning Communities in Remedial Courses

One possible model that may be beneficial in a remediation program is learning communities. In learning communities, students are organized into cohorts that take paired remedial and academic courses, such as a remedial writing course linked with an entry-level psychology course. In 2002, the National Survey of First-Year Academic Practices found that 62 percent of responding colleges enrolled at least some cohorts of students into a learning community, although most of these programs involved only a small portion of students. The use of learning communities is currently one of the fastest growing and most prominent approaches to remediation.

Proponents of learning communities suggest several reasons why this approach may be more effective than traditional models of teaching in helping students with low basic skill levels. Linking a course like remedial English with a course in a student’s major may make the material more engaging and motivate the student to work harder. Students in learning communities are
challenged to view course material from different perspectives, thereby building critical thinking skills and deepening their understanding of it. Finally, students in learning communities have the opportunity to form deeper ties with their peers and with faculty, thereby strengthening their support networks and their attachment to the institution.

Despite widespread enthusiasm for the learning community model, research analyzing its effectiveness as an instruction model is remarkably thin, as indeed is research on remediation in general. Vincent Tinto, in 1997 and 1998 studies, found positive results at LaGuardia Community College and Seattle Central Community College by comparing students who voluntarily enrolled in learning communities to students who did not.\textsuperscript{55} More recently, MDRC conducted a random assignment evaluation of a learning communities program at Kingsborough Community College in Brooklyn as part of its Opening Doors Demonstration. They have found: “relative to a control group of students in regular classes, students in the learning community moved more quickly through developmental English requirements, took and passed more courses, and earned more credits in their first semester.” However, the evidence was much more mixed on whether the program increased college persistence. According to the MDRC report, “Initially the program did not change the rate at which students reenrolled. In the last semester of the report’s two-year follow-up period, however, slightly more program group members than control group members attended college.”\textsuperscript{56} Further evaluation is needed to determine their effects on academic achievement and persistence, particularly for students entering college with low basic skills.
Redesigning Remediation Courses: The Tennessee Example

Other institutions have tried much more drastic changes to their remedial offerings. In the fall of 2007, the Tennessee Board of Regents implemented a redesign of remediation at four of the public college campuses using grants from the National Center for Academic Transformation (NCAT). During the 2008-09 academic year, the state began piloting redesigns in six community colleges of their instructional approaches with the goal of allowing students to spend less time in remedial courses. At these institutions, remedial courses are taught using technology to enable students to work at their own pace and focus attention on the particular skills in which they are deficient. These courses are tailored much more to students’ specific needs and academic deficiencies. Administrators and policy makers are optimistic that these types of changes could greatly improve student learning and long-term outcomes. However, current evaluations simply report the remedial pass rates and test scores of students before course redesign and after, not accounting for the selection of students into these courses and differences that may have occurred over time. Therefore, much more research is needed to determine whether this is a promising, cost-effective way to improve remediation. Moreover, previous research has only looked at a very limited list of outcomes. However, the pilots were found to improve course completion rates (as measured by a final grade of C or better), as well as reduce their instructional costs on average by 36 percent. The Tennessee Board of Regents is expanding its redesigns for developmental courses, and by 2013 all its community colleges must have in place programs that have technology as an integral part and must focus on helping students master their remedial subjects at their own pace.
Avoiding the Need for Remediation

Another tactic some states and institutions are taking is to try to avoid the need for remediation altogether through the use of early placement testing. Such programs administer remediation placement exams to high school students in order to provide them with early signals that they may lack competencies critical to success in a postsecondary institution. Most often this is done during the 10th or 11th grade year. The tests are designed to improve the information high school students have regarding their preparation for college and encourage those who fall short to take additional coursework in their senior year. With their teachers, counselors, and parents, students can then determine what courses to take while still in high school in order to avoid college remediation. With costs considerably less than college remediation, early placement testing programs may be a much more affordable way to address the problem of preparation for some students; Ohio estimates the cost of improving a student one-level higher in college math using an early testing program is $17.58

The earliest example of early placement testing took place in Ohio in 1978. It began as an experimental program between one high school in Columbus and an Ohio State University math professor. Today, the Early Mathematics Placement Testing program is supported by the Ohio Board of Regents, with funding from the Ohio legislature. It remains closely tied to the Ohio State University math department, although all Ohio state-supported, four-year universities and some two-year and private colleges have been incorporated into the program. On the other hand, there is little connection with K-12 systems, and participation by high schools is voluntary, limited, and fluctuates from year to year. For example, between the 2003-04 and 2004-05 school years, participation fell from 261 to 231 high schools.59 Still, an evaluation of the Ohio program found that participation in the Early Mathematics Placement Testing program had a significant
effect on mathematics placement at the college level; the evaluation further concluded that the program effectively reduced remediation. Students who participated in EMPT were more likely to place higher in math upon entering Ohio State University and less likely to require remediation. Since 1978, at least 12 states have followed Ohio’s example and implemented similar programs.

In California, the Early Assessment Program (EAP) provides high school juniors with information about their academic readiness for coursework at California State University campuses. One study examined the effects of the program as offered in spring 2004. Fifteen optional multiple choice questions were added to each of the mandatory California Standards Tests in 11th grade English and mathematics. Students who opted to complete those questions then received a letter the summer before senior year denoting their performance level and advice about what courses to take in their senior year. They were also directed to additional resources to improve their readiness for college coursework. In an evaluation of the program, Jessica Howell, Michal Kurlaender, and Eric Grodsky find that “participation in the Early Assessment Program reduces the average student’s probability of needing remediation at California State University by 6.1 percentage points in English and 4.1 percentage points in mathematics.” They conclude that EAP increased students’ academic preparation in high school and did not discourage poorly prepared students from applying. This suggests such programs have promise in reducing the need for remediation, but the framing of the information given to students is important.
Conclusion

For the last several decades, the United States has focused on increasing access to higher education, with the promise of substantial private benefits for the individual and public benefits for society. The reality is that many students seeking the benefits of a college degree are not academically prepared for college-level coursework. Remediation has grown to address this gap, allowing for the continued expansion of college access with the hope of giving students the foundational skills necessary to persist to degree completion. However, it is questionable whether remediation is currently living up to that hope, as the little research available gives mixed estimates on whether remediation is working at all. There are also many unanswered questions about how, and, more importantly, why the effects of remediation differ across students and institutions. For the 30 to 40 percent of first-year students who are placed in the courses, remediation can serve to delay college credit accumulation and prolong the pathway to completion. Many never complete their remedial coursework, thereby ending their pursuit of a postsecondary credential. “Fixing” remediation by identifying and developing better ways to conduct the courses is therefore essential to increasing educational attainment.

Of course, as the main gateway to college-level courses, especially given the fact that most students attend non-selective institutions, remediation is a significant cost to taxpayers, institutions, and students. Debates about limiting or restricting remediation are therefore understandable, but they can be counterproductive to the goal of increasing degree attainment. As noted in a *Time* magazine article, eliminating remediation in higher education could “effectively end the American experiment with mass postsecondary education.”63 The low levels of academic preparation inherited by higher education are certainly a challenge, but solutions need to be found to address the problem if the country is serious about raising graduation rates.
With half of students completing their college degrees, to increase in degree completion, we must figure out ways to address the needs and concerns of the bottom half of the distribution, most of whom are placed into remediation. By helping students gain the skills they need to succeed in college-level courses using the most cost- and time-effective methods, improved models of remediation could contribute significantly to the nation’s goals of increasing educational attainment.
Jay Greene and Greg Foster, *Public High School Graduation and College Readiness Rates in the United States* (Manhattan Institute, Center for Civic Information, Education Working Paper, no. 3, September 2003) define being minimally college ready as (1) graduating from high school, (2) having taken four years of English, three years of math, and two years of science, social science, and foreign language, and (3) demonstrating basic literacy skills by scoring at least 265 on the reading National Assessment of Educational Progress.

In this paper, I refer to all types of below-college-level courses as remedial or developmental. This includes “basic-skills training” and “nontraditional coursework” as other names for developmental or remedial courses. I acknowledge that different areas of the country and stakeholders may have other preferred names.


Ohio Board of Regents, “The Preparedness of Recent High School Graduates Entering Ohio’s State-Supported Colleges & Universities.” *Ohio’s High School Students go to College 2002: Profile of Student Outcomes and Experiences*. (Columbus, OH: Ohio Board of Regents, 2002).


For example, 25 percent of Ohio high school graduates with a known core curriculum required remediation in either math or English. See Ohio Board of Regents, *Making the Transition from High School to College in Ohio 2002*. (Columbus, O.H.: Ohio Board of Regents, 2002).


By 2006, these companies had stopped providing most of their services. Some of the problems cited by a former Sylvan executive that led to them eliminating that part of their business include the long length of time it took for colleges to decide whether to hire the company and opposition from faculty members who disliked the idea of outsourcing teaching duties. See Goldie Blumenstyk, “For-profit education: Facing the challenges of slower growth,” *Chronicle of Higher Education* 52, no 18, A13, 2006.


Legislative Office of Education Oversight, *Remedial and Developmental Programs in Ohio’s Public Colleges and Universities*, (Columbus: Ohio General Assembly, 1995). Over four-fifths of campuses nationally restrict enrollment in some college-level classes until remediation is complete, and most require those in need of remediation to


Ohio Board of Regents, Ohio Colleges and Universities 2001: Profile of Student Outcomes, Experiences and Campus Measures (Columbus, O.H.: Ohio Board of Regents, 2001).

Legislative Budget Board, “The Cost of Developmental Education in Texas.” Higher Education Performance Review (Austin, TX: The Charles A. Dana Center at the University of Texas at Austin, 2007).


Because these figures include indirect costs such as libraries, registration, and plant maintenance, they should not be used to determine the savings associated with eliminating remediation.


City University of New York, Report I: Financial Analysis of Remedial Education at the City University of New York, (New York: City of New York, Mayor’s Advisory Task Force on the City University of New York, 1999).

It is important to distinguish between the remedial costs of recent high school graduates versus nontraditional college students, including adult learners and immigrants. While critics blame the K-12 system for the remediation of its recent graduates and suggest high schools should contribute to the costs associated with these students, most treat older students returning to higher education to upgrade their skills as a separate category.


Colleen Moore, Nancy Shulock, Miguel Ceja, and David Lang, Beyond the Open Door: Increasing Student Success in the California Community Colleges. (Sacramento, CA: Institute for Higher Education Leadership and Policy, California State University, 2007). Available online at http://www.csus.edu/ihelp/PDFs/R_Beyond_Open_Door_08-07.pdf


Judith James, Victoria Morrow, and Patrick Perry, Study Session on Basic Skills: A Presentation to the Board of Governors, California Community Colleges, July 2002.

University of Georgia, "Academic Affairs Handbook: Section 2.9.1 Administrative Procedures for Learning Support Programs.” Available online at http://www.usg.edu/academic_affairs_handbook/section2/handbook/2.9_learning_support/.


The authors focus on students who were age 18 to 20 when they initially began college. Also, to get data on past student preparation and performance, they limit the sample to students who took the ACT. This is not a strong restriction given testing patterns among the group indicating they want to complete a degree.

Additionally, Bettinger and Long found that community college students placed in math remediation were 15 percent more likely to transfer to a four-year college and to take ten more credit hours than students with similar test scores and high school preparation.


The authors also address concerns about noncompliance, or the fact that some students choose not to follow the placement rules by taking the recommended level of course (remedial or college-level), as well as concerns about endogenous sorting around the policy cutoff, which is due to the fact that some students retook the placement exam multiple times until they passed the cutoff.

More specifically, students on the margin of requiring math remediation were slightly more likely to persist to their second year than their non-remedial peers, but the likelihood of passing subsequent college-level English composition was slightly lower for remedial students.

During their focal time period, the state had a single placement exam and cutoff score.


50 This was also found by Bettinger and Long (2009).


53 Zachry and Schneider, (2010).


57 Initially redesign efforts were planned at six colleges in Tennessee, but two colleges did not have successful implementation of the redesign efforts.

58 Ohio Early Mathematics Placement Testing Program at The Ohio State University, 2003.

59 Data requested from Early Mathematics Placement Testing by the author on historical participation by high school; received January 23, 2006.


61 Ohio Early Mathematics Placement Testing available online at www.empt.org.


The Ohio Experience With Outcomes-Based Funding

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Introduction

National, state, and institutional leaders are setting higher goals for higher education to improve productivity, promote student success, and ensure accountability. These recurring and now consistent calls for change tend to direct one’s attention to the sources and consequences of successful policy innovation at the state level. Ohio is generally perceived as a somewhat conservative, middle-of-the-road Midwestern state. Despite this general reputation, Ohio is increasingly known as a state that has had numerous creative and relatively successful policy innovations in higher education, especially in the area of outcomes-, or performance-based, funding. Why? This paper will briefly review Ohio’s history of state funding, then turn to a more in-depth discussion of recent policy innovations, and will finally argue that Ohio’s successful implementation of performance funding is a function of five factors:

1. Participation, authorization, or direction by state executive or legislative policy-makers, which both legitimized and authorized initiatives.

2. An institutionalized practice of bringing various stakeholders together to craft and evaluate new funding policies. These consultations increased participation, communication, mutual respect and trust, and buy-in among affected parties, and built in an explicit sensitivity to diverse campus missions and campus financial circumstances.

3. The existence of a robust and timely data system capable of quickly modeling funding ideas and scenarios and producing trustworthy funding allocations.

4. Commitment to systematic evaluation of programs and policies.

5. Additional money.
At the Founding: A Data-Based Foundation

The Ohio Board of Regents (OBR) was created in the mid-1960s to coordinate higher education policy for the state. Shortly after its creation, the first chancellor, John Millett, developed a methodology for allocating state support through a cost and student enrollment-based formula. Chancellor Millett was already an expert in higher education finance and had been the President of Miami University of Ohio. His appointment as chancellor of the state regents gave him an opportunity to put his financial expertise into practice at the state level. The subsidy allocation methodology that Millett developed for Ohio’s two- and four-year institutions was based on a single formula for all campuses, and required the routine collection by the Regents of detailed student, faculty, finance, facilities, and course data from all campuses; this data system came to be known as the Uniform Information System (UIS). While the original purpose of the UIS was to determine state subsidy shares based on enrollments and cost allocations (and to form the basis for claims for additional support from the state), over time the data in the system came to be used for other purposes, including the development of alternative funding approaches, many of which could be classified as performance-based.

The use of data in this manner this early in the history of the Board of Regents established a number of important precedents, including a rejection of a simple and potentially static “base-plus” funding system and a rejection of a politicized approach to allocating higher education resources. Most importantly, the data-driven funding model was premised on a recognition of the need for, and acceptance of the consequences of, an empirically-based funding system that would produce variable allocation outcomes from year to year, based on activity valued by the state—in this case, student enrollments categorized by level and costs. As one former Senior Vice Chancellor of the Board of Regents observed, the state’s enrollment-based
subsidy system was in fact a performance-based funding system: it valued and funded the campus performance known as enrolling students, and it did so with great precision.

The subsidy allocation proposals were not made unilaterally by the Regents or its staff. At least biennially, and sometimes more often, the Board of Regents would convene a series of consultations of campus financial and academic leaders and representatives of selected state agencies to revisit the funding system’s data and methodology. These consultations were used to update the data in the UIS, to revise the formula to correct for unintended or perverse effects or to reflect new priorities and realities, and ultimately to recommend to the Board of Regents changes in the formula, the level of funding that should be requested of the state, and when appropriate, tuition levels as well. This process of consultation became institutionalized in Ohio; technical issues would be handled by mid-level campus and Board staff, while major changes in policies and potential conflicts would trigger the collective attention of the Chancellor, Vice-Chancellors, institutional Presidents, legislators, leaders of other state agencies, and members of the Regents themselves. In addition to the formally invited members, the meetings were open to the public, and the number of non-members sometimes exceeded the number of members at many consultations.

1980s: Seeking Excellence During an Economic Boom

Ohio’s first major experiment with a non-enrollment performance-based funding occurred in the mid-1980s, as Ohio’s economy came roaring out of the early 1980s recession. Following the deep recession of 1980-81, state tax revenues began to exceed projected collections by hundreds of millions of dollars, leaving state policymakers in the position of having significant additional resources to allocate for public purposes. In higher education, some of those additional state
funds were directed to a new program, called “Selective Excellence,” which was intended to foster excellence and promote change among all of Ohio’s arguably underfunded public campuses. While it maintained its base subsidy allocation, Ohio experimented with a number of alternative funding schemes to achieve new goals. Funds from four of these programs – called Academic Challenge, Program Excellence, Productivity Improvement, and Eminent Scholars – were either competitively awarded or “bolt-on” additions to the base funding formula. A fifth program, called Research Challenge, provided for a distribution of state funds proportionate to each university’s share of total third party research grant revenues generated annually. By providing a partial state match for past research success, Research Challenge became the first true performance-based funding mechanism created in Ohio, and is the only Selective Excellence program which has continuously persisted over the years. An evaluation of the Selective Excellence program conducted by the National Center for Higher Education Management Systems (NCHEMS) endorsed the use of incentive-based funding streams as an effective funding tool and concluded that the programs did change institutional allocation decisions in desired directions. The NCHEMS report lauded the fact that the goals were jointly developed by the Board of Regents and campus leaders, but criticized the programs as being underfunded and too focused on campus (rather than state) goals.

Early 1990s: Retrenchment and Recession, and the Managing for the Future Initiative

Following the economic recovery of the late 1980s, the recession of the early 1990s put Ohio’s state finances back on its heels. Limited resources resulted in the abandonment of a number of the Selective Excellence programs and the creation by a new Governor of a Management Improvement Commission for state agencies. Higher education was granted its own management
improvement commission, which came to be known as the “Managing for the Future”
commission, and its final report was titled “Securing the Future of Higher Education.” The
commission was broadly representative and included senior academic and financial leaders from
higher education and state agency directors who met over an extended period of time, and
wrestled with a number of governance, coordination, quality, and access issues. Among the
recommendations was a proposal to rationalize Ohio’s kaleidoscope of two-year campuses by
converting most two-year campuses into community colleges.

At the time, due in large part to the fact that higher education had “evolved” in the state
over hundreds of years, Ohio had five types of two-year public campuses. This proliferation of
two-year campus types caused confusion among state decision-makers, poor coordination of
higher education programs, and produced uneven access and service delivery throughout the
state. University branch campuses served a multiplicity of two-year, four-year, and even
graduate purposes, and generally charged higher fees than other two-year campuses. While state
technical colleges provided career education but had no authority to offer transferable associate
of arts degrees, state community colleges had authority to do so but lacked resources to ensure
access because they did not have taxing authority from their communities and had to survive on
the combination of state and student funds. A few fully-funded community colleges—those with
local levies—benefitted from the additional resources provided by local tax revenues, and
generally served a broader array of the two-year campus mission at more affordable prices, but
they were the exception to the rule. Finally, four universities had embedded “Comm-Techs”
which offered a mix of two-year services, generally at significantly higher prices than those
charged by the community colleges.
The Managing for the Future Task Force recommended that Ohio create a statewide system of community colleges by transforming all technical colleges and regional campuses into true community colleges. A battle ensued, and opposition to the proposed changes—primarily from the regional campuses—was successful. A substitute proposal emerged in the final recommendations which required that all two-year campuses meet uniform service expectations: the final proposal thereby avoided the sticky structural and governance issues by focusing instead on the functions to be performed by the two-year campuses. The “service expectations” laid out by the *Securing the Future* report represent the first explicit linkage of funding to “performance,” setting Ohio on the path to further innovation in performance-based funding ideas. The *Securing the Future* report argued that service, not organizational structure, was the defining characteristic of an institution of higher education:

“The Board also sees much merit in the argument of the report's critics that the concept of a two-year college system should be based on a service principle, not an organizational one. The Board is principally concerned about what two-year campuses should do—their institutional behavior—and has interest in their administrative structures only when they fail to serve effectively. Although in the long run it will be helpful to adopt a single term to strengthen public understanding of the consistency of services provided, it is not important from the Board's perspective whether the campuses are administered as university branches, or as community colleges. The goals of all of these campuses must be one of full service at an affordable price.”

Based on this reasoning, the Regents set “service expectations” that two-year campuses were expected to meet. These included developing an array of technical and career programming to prepare individuals for the workforce, offering developmental education with an eye toward building academic skills, maintaining college transfer programs for those students who sought a bachelor’s degree from a four-year college, and to offer all of these things at an affordable price and in a convenient fashion. The report also emphasized collaboration between institutions and
the community and local industry involvement on college decision-making about course
offerings, fees, and other operational issues.

In the FY 1993—FY 1995 state appropriations act, the General Assembly supported the Regents’ recommendations with the following provision:

“In conducting its biennial…consultation for the 1995-1997 biennium, the Board of Regents shall examine methods to tie a significant and growing portion of the funding distributed to two-year campuses to the performance records of those campuses beginning during the 1993-1995 biennium against the nine service expectations established by the Board of Regents’ report Securing the Future of December 1992.”8 (emphasis added)

Although Research Challenge introduced the idea of performance-based funding to Ohio’s campuses, the implementation of the Two-Year Campus Service Expectations first introduced Ohio to the explicit use of the term “performance” in a funding allocation. The Board of Regents requested, and the General Assembly provided, about $3 million per year in funding to support the implementation of the two-year campus service expectations. Each of the nine expectations was defined and weighted for funding, and data was collected from all campuses regarding their ability to deliver the services. All two-year campuses quickly demonstrated that they met the service expectations, and funding for the Two-Year Campus Service Expectations was eventually eliminated after two biennia in the late 1990s.

**Late 1990s: The Four Challenges Supported During an Economic Surge**

In the 1990s, surging enrollments at the community colleges and relatively flat state funding caused increasing shares of base state subsidy to be driven to the community colleges, often at the expense of university main campuses.9 Alarmed at the loss of state support and the prospect of more losses, some university representatives reacted by asking the General Assembly to direct the Board of Regents to examine and recommend ways to distribute portions of state
subsidy on the basis of performance instead of enrollments. Specifically, the appropriations act for FY 1995 – FY 1997 stipulated:

“A review of the…subsidy formula shall begin by October 1, 1995 and be completed by July 1, 1996. The actual review process shall be determined jointly between the Board of Regents and the state-assisted colleges and universities. The review shall address how the state can provide base funding for its institutions of higher education while allocating a higher share of funding according to measures of performance and quality.”¹⁰ (emphasis added)

Recognizing the significance of such a charge, then-Chancellor Elaine Hairston convened a new senior-level commission, called the Higher Education Funding Commission, to develop recommendations, which were completed in 1996.¹¹

Given additional administrative resources from the state in the form of an appropriation line item, and assisted by the insights and guidance of a very able consultant, the Funding Commission recommended that Ohio create five new programs—in addition to Research Challenge—that were mission-driven and performance-based.¹² The final forms of these “Challenge” line items are described below:

**Table 1: The Challenge Programs**

<table>
<thead>
<tr>
<th>“Challenge” Program</th>
<th>Goal</th>
<th>Basis of Distribution of Funds</th>
<th>Primary Recipient of Funds</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Access Challenge</strong></td>
<td>Reward access campuses for enrolling more students; use funds to lower student fees</td>
<td>Campus shares of total lower division students enrolled</td>
<td>Two-year campuses</td>
</tr>
<tr>
<td>2. <strong>Success Challenge</strong></td>
<td>Reward university main campuses for academic success of undergraduates</td>
<td>33% for timely completion of any in-state undergraduate baccalaureate degree; 67% for baccalaureate degree completion at any time of at-risk students</td>
<td>Four-year campuses</td>
</tr>
<tr>
<td>-------------------------</td>
<td>-------------------------------------------------</td>
<td>---------------------------------------------------------------------------------</td>
<td>------------------</td>
</tr>
<tr>
<td>3. <strong>Jobs Challenge</strong></td>
<td>Reward primarily two-year campuses for non-credit job-related training</td>
<td>Campus shares of job training revenues obtained from businesses and industry; some funds reserved for capacity building</td>
<td>Two-year campuses</td>
</tr>
<tr>
<td>4. <strong>Research Challenge</strong></td>
<td>Reward university main campuses for research competitiveness</td>
<td>Campus shares of third party sponsored research</td>
<td>Four-year campuses and standalone medical colleges</td>
</tr>
<tr>
<td>5. <strong>School Success Challenge</strong></td>
<td>Reward all campuses for K-12 linkages</td>
<td>Categorical and competitive grant (rejected by General Assembly)</td>
<td>All campuses</td>
</tr>
<tr>
<td>6. <strong>Technology Challenge</strong></td>
<td>Reward all campuses for IT investments</td>
<td>Categorical and competitive grant (partially funded by General Assembly)</td>
<td>All campuses</td>
</tr>
</tbody>
</table>

The remainder of this section pertains to items 1 – 4, which were largely adopted by the General Assembly as recommended by the Funding Commission, with the notable exception that Access Challenge appropriations provided by the General Assembly actually exceeded Board-recommended levels. These four Challenge programs were perceived as a reasonably balanced among four-year and two-year missions and targeted on Ohio’s needs, and the distribution of funds were performance-based in a manner that was not highly correlated with the distribution of the base enrollment subsidy.
Because they were universally supported by campuses, the Funding Commission, the Regents, newly appointed Chancellor Roderick G.W. Chu, and the General Assembly, and created during a time of economic growth in the state, the Challenge line items were generously funded up through the recession of 2002, as shown in Table 2. Funding was maintained during and after the recession with relatively minor reductions.

Table 2: State funding for the Four Challenges, FY 1986 – FY 2009\(^{13}\)

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>Access Challenge</th>
<th>Jobs Challenge</th>
<th>Research Challenge</th>
<th>Success Challenge</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1986</td>
<td>$0</td>
<td>$0</td>
<td>$11,346,846</td>
<td>$0</td>
<td>$11,346,846</td>
</tr>
<tr>
<td>1987</td>
<td>$0</td>
<td>$0</td>
<td>$15,955,000</td>
<td>$0</td>
<td>$15,955,000</td>
</tr>
<tr>
<td>1988</td>
<td>$0</td>
<td>$0</td>
<td>$10,567,898</td>
<td>$0</td>
<td>$10,567,898</td>
</tr>
<tr>
<td>1989</td>
<td>$0</td>
<td>$0</td>
<td>$12,537,417</td>
<td>$0</td>
<td>$12,537,417</td>
</tr>
<tr>
<td>1990</td>
<td>$0</td>
<td>$0</td>
<td>$11,708,319</td>
<td>$0</td>
<td>$11,708,319</td>
</tr>
<tr>
<td>1991</td>
<td>$0</td>
<td>$0</td>
<td>$11,103,060</td>
<td>$0</td>
<td>$11,103,060</td>
</tr>
<tr>
<td>1992</td>
<td>$0</td>
<td>$0</td>
<td>$3,481,466</td>
<td>$0</td>
<td>$3,481,466</td>
</tr>
<tr>
<td>1993</td>
<td>$0</td>
<td>$0</td>
<td>$8,167,500</td>
<td>$0</td>
<td>$8,167,500</td>
</tr>
<tr>
<td>1994</td>
<td>$0</td>
<td>$0</td>
<td>$8,300,083</td>
<td>$0</td>
<td>$8,300,083</td>
</tr>
<tr>
<td>1995</td>
<td>$0</td>
<td>$0</td>
<td>$8,451,955</td>
<td>$0</td>
<td>$8,451,955</td>
</tr>
<tr>
<td>1996</td>
<td>$0</td>
<td>$0</td>
<td>$6,314,220</td>
<td>$0</td>
<td>$6,314,220</td>
</tr>
<tr>
<td>1997</td>
<td>$0</td>
<td>$0</td>
<td>$18,004,821</td>
<td>$0</td>
<td>$18,004,821</td>
</tr>
<tr>
<td>1998</td>
<td>$12,000,000</td>
<td>$500,000</td>
<td>$12,764,600</td>
<td>$2,000,000</td>
<td>$27,264,600</td>
</tr>
<tr>
<td>1999</td>
<td>$16,000,000</td>
<td>$2,500,000</td>
<td>$14,756,861</td>
<td>$4,000,000</td>
<td>$37,256,861</td>
</tr>
<tr>
<td>2000</td>
<td>$35,313,691</td>
<td>$8,743,864</td>
<td>$19,436,382</td>
<td>$20,068,104</td>
<td>$83,562,041</td>
</tr>
<tr>
<td>2001</td>
<td>$65,268,000</td>
<td>$10,979,694</td>
<td>$21,568,440</td>
<td>$48,741,000</td>
<td>$146,557,134</td>
</tr>
<tr>
<td>2002</td>
<td>$58,531,920</td>
<td>$9,494,000</td>
<td>$18,800,000</td>
<td>$44,218,540</td>
<td>$131,044,460</td>
</tr>
<tr>
<td>2003</td>
<td>$57,068,622</td>
<td>$9,348,300</td>
<td>$18,255,000</td>
<td>$43,113,077</td>
<td>$127,874,999</td>
</tr>
<tr>
<td>2004</td>
<td>$64,711,966</td>
<td>$9,348,300</td>
<td>$17,555,047</td>
<td>$48,952,126</td>
<td>$140,567,439</td>
</tr>
<tr>
<td>2005</td>
<td>$63,340,676</td>
<td>$9,348,300</td>
<td>$17,183,044</td>
<td>$52,601,934</td>
<td>$142,473,954</td>
</tr>
<tr>
<td>2006</td>
<td>$63,340,676</td>
<td>$9,348,300</td>
<td>$20,343,097</td>
<td>$52,601,934</td>
<td>$145,634,007</td>
</tr>
<tr>
<td>2007</td>
<td>$63,340,676</td>
<td>$9,348,300</td>
<td>$23,186,194</td>
<td>$52,601,934</td>
<td>$148,477,104</td>
</tr>
<tr>
<td>2008</td>
<td>$66,585,769</td>
<td>$9,348,300</td>
<td>$17,186,194</td>
<td>$53,653,973</td>
<td>$146,774,236</td>
</tr>
<tr>
<td>2009</td>
<td>$66,585,769</td>
<td>$9,348,300</td>
<td>$17,186,194</td>
<td>$53,653,973</td>
<td>$146,774,236</td>
</tr>
<tr>
<td>Total, all years</td>
<td>$632,087,764</td>
<td>$97,655,659</td>
<td>$344,159,638</td>
<td>$476,206,595</td>
<td>$1,550,109,656</td>
</tr>
</tbody>
</table>
The Challenge line items were successful politically, financially, and programmatically. Legislators largely embraced the idea of focusing new state funds on specific programs whose outcomes could be systematically tracked. Financially, the Challenge funding quickly grew to an amount equal to 8 to 10 percent of base state funding (see Figure 1) – an almost unheard of proportion relative to most other state experiences. Most importantly, the line items were programmatically easy to implement and quickly demonstrated successful outcomes. By the late 1990s, Ohio had embraced the idea of performance funding, which was promoted, at least initially, by campuses that were concerned that an enrollment-based formula would disadvantage campuses that were “mature” and at capacity.

**Figure 1: Challenge funding as a portion of base funding**

![Graph showing Challenge funding as a portion of base funding.](image)

**Implementation of the Challenge Line Items**

Implementation of the Challenge line items at the state level – that is, the collection of data and the use of these data to determine allocations among campuses – was relatively easy to accomplish. The data needed to determine allocations for Access Challenge and Success Challenge were already collected in the Board’s higher education data system. Likewise, the
data needed to continue the Research Challenge allocations had been collected for years, and were gradually incorporated into the more comprehensive state data system. Only the Jobs Challenge required the collection of new data, on non-credit job-related training revenues, and that data was relatively easily collected and put into use in the existing data system.

Implementation at the campus level was somewhat different. Access campuses were required to use new incremental amounts of Access Challenge funding to restrain or reduce tuition, and compliance, as well as the consequences of compliance in terms of enrollment growth, were relatively easily monitored by the staff of the Regents. University main campuses were required to submit a biennial report on the outcomes of their Success Challenge-funded programs to assist at-risk students. These individual campus reports were summarized and compiled into a single state report for submission to the General Assembly and use by all campuses. Jobs Challenge funds were partitioned into two or three components, one to be used for capacity-building in campus Business and Industry offices, another to be used in an initiative called the Targeted Industry Training Program which provided subsidized training assistance to small- to medium-sized firms in manufacturing, information technology, and a few other fields. Research Challenge funds were used largely as they had been used in the past – for example, to make strategic investments to reduce teaching loads for selected faculty (either promising young faculty or senior faculty) to free up their time to work on research and grant applications.

Ultimately, each campus recipient of Challenge funds shared one goal – to do more of what they had been doing in the past in order to obtain more state funds, or at least a largest possible share of available funds—e.g., enroll more lower-division students, help more in-state undergraduates achieve their baccalaureate degrees, train more employees and assist more businesses with non-credit training, and successfully compete for more third party research. The
state had little interest in how campuses achieved these goals, and therefore did not micromanage the implementation of the programs.

*Effects of the Challenges*

In the short run, two-year campuses – and especially community colleges -- experienced extraordinary enrollment growth as they froze and then reduced student fees, funded by Access Challenge appropriations; university main campuses biennially reported their Success Challenge plans and programs to serve at-risk students, and this information was shared both on the web and in a number of new campus-initiated statewide consultations on student success; evaluations of Research Challenge continued to report annual returns on investment of around $10: $1; and small business owners and managers would often testify before occasional Regents meetings and legislative committees that the training subsidized by Jobs Challenge helped make their businesses more competitive and profitable.

All of these initial reports and outcomes persisted and were documented in a 2008 report mandated by the General Assembly and generated by the staff of the Board of Regents.\(^\text{16}\)

Regarding the **Success Challenge**, the report found that:

1. “The median time to degree for in-state bachelor’s degree graduates at university main campuses decreased from 4.7 years in FY 1999 to 4.3 years in FY 2003, and has stayed at this level through FY 2006;

2. The percent of in-state bachelor's degree graduates who earned their degrees in 4 years or less increased from 34 percent in 1999 to 43 percent in 2006; and conversely,

3. The percent of in-state bachelor's degree graduates who took longer than six years to earn their degree decreased from 18 percent in 1999 to 14 percent in 2006.
4. The number of at-risk students who received bachelor’s degree increased by 13 percent;
5. The at-risk student share of total in-state bachelor's degree graduates stayed fairly constant at around 30.5 percent;
6. The median time-to-degree of in-state, at-risk, bachelor's degree graduates decreased from 1998 to 2006, from 5.0 to 4.8 years; and
7. The percent of in-state, at-risk degree graduates who earned their degree in 4 years or less increased from 20 percent in 1999 to 26 percent in 2006.”

Regarding Access Challenge, the evaluation concluded that the funds were indeed used to restrain or reduce in-state tuition—tuition at two year campuses actually dropped an average by about 6 percent from FY 2000 to FY 2001—and that as a result enrollments at access campuses had increased by over 37,000 students in a seven-year period, and that the increased enrollments at the two-year campuses had not come at the expense of Ohio’s four-year campuses.

Jobs Challenge funding was successfully used to build campus capacity to offer more non-credit training, market campus non-credit offerings, and deliver specialized training programs throughout the state. Over 190,000 employees at small- to medium-sized firms benefited from the training, and a survey of participating companies concluded that:

“…companies reported that Jobs Challenge generated an average ROI of $372 million per year in the six-year period from FY 2002 to FY 2007. The reported ROI ranged from a high of $641.6 million in FY 2002 to a low of $210.7 million in FY 2006. According to the survey responses, the ROI occurred through: increased efficiency, reduced cycle time, reduced turnover, achievement of certification, increased quality, increased business, better job succession, improved safety performance, and decreased waste – all contributing to improved worker wages and increased profits.”
The **Research Challenge** program demonstrated its continuing effectiveness in increasing the competitiveness of Ohio’s research universities. The dollar volume of third-party sponsored research increased continuously and significantly year over year, and Ohio’s per capita share of such research increased from a low of about 60 percent of the national average in the late 1980s to nearly 90 percent of the national average toward the end of the period studied. One external report to the Board of Regents in 1996 indicated that Research Challenge funds had resulted in a leverage of $14 in external funding for every $1 in Research Challenge funds provided by the state.17

**In the 21st Century**

Four major events occurred in the 21st century which had the cumulative effect of accelerating and broadening Ohio’s use of performance-based funding. Each reaffirmed general support for performance-based funding, and extended the principles far beyond the status quo that was established by the Higher Education Funding Commission.

*The Governor’s Commission on Higher Education and the Economy*

Primarily at the urging of the Board of Regents, in 2003 then-Governor Bob Taft created the “Governor’s Commission on Higher Education and the Economy,” which came to be known as its partial acronym, CHEE. This blue-ribbon commission engaged college and university presidents, business leaders, legislators, executive staff, and others in a year-long analysis of the significance of higher education to Ohio’s economy. The final CHEE report provided a framework and charge for increasing academic and administrative efficiency among Ohio’s
public institutions, formally engaged Ohio’s business community in higher education policy and practice through the creation of an entity known as the Business Alliance for Higher Education and the Economy (BAHEE), and strongly reaffirmed the significance and popularity of Research Challenge by recommending increases in funding for the program, and less directly, endorsing the other Challenge line items.18

The Higher Education Funding Study Council

Shortly after the issuance of the CHEE report, a new entity—called the Higher Education Funding Study Council (HEFSC)—started its work. Established by the legislature and chaired by a legislator, the Council was broadly inclusive of a wide range of higher education stakeholders and worked in 2006 and 2007 under what was arguably too broad a mandate, as stated in the Appropriations Act: “The Council shall review all aspects of higher education funding contained in this act, including all appropriation items and shall recommend any changes it determines are necessary.”19

Coming ten years after the work of the Higher Education Funding Commission, the creation of the Council came hard on the heels of the work of CHEE, and its work also coincided with another technical but major review of the state’s base enrollment subsidy formula that contained significant refinements and improvements in the formula. In addition, the Council’s final report was accompanied by a dissenting minority report, authored by members of the minority party in the House and Senate.20 The combination of these factors probably weakened the immediate impact of the Council’s recommendations. However, in regard to performance-based funding, the Council’s final recommendations were as follows:21
Directed decision-makers’ attention to the idea of using degree and certificate completions in the base subsidy formula;

- Recommended the creation of a new “Challenge” to promote certificate and associate degree completion; and
- Reaffirmed support for Access Challenge.

The TANF Educational Awards Program

In 2006, Ohio began to experiment with outcomes-based student financial aid with the creation of the TANF Educational Awards Program, or TEAP. The state had a then-surplus of Temporary Assistance for Needy Families (TANF) appropriations, and the Governor’s office invited proposals from the Board of Regents to propose an outcomes-based student financial aid pilot to be funded through the TANF resources.

The staff of the Board of Regents quickly responded, and the TEAP proposal was created by an executive order\(^\d\), effective July 1, 2006. The executive order provided that up to $30 million could be used in one year for the program, and that all public and private not-for-profit campuses were eligible to participate. Student eligibility was limited to independent students with dependents who had an “expected family contribution” of $0, had already completed 15 credits of college work, and were enrolled in at least three credit hours during the term for which they wanted to use the grant.

These criteria essentially targeted the funds to very low-income single parents who had demonstrated their ability to overcome some of their life circumstances by completing one-half year of college without additional support from the state.
The TEAP grants were structured to supplement and not supplant any existing student financial aid grants, were sizable, and contingent on performance. The maximum grant was $1,200 per semester for a full-time student and $600 for a part-time student; one-third of the grant was distributed at the beginning of the term, and two-thirds at the end of the term; the student had to successfully complete his or her courses to receive the full end-of-term portion. Students were permitted to use the grant funds for a wide variety of uses, including books and materials, equipment, transportation, and child care.

The FY 2007 program was evaluated by agency staff. That evaluation concluded that the program appeared to be successful in achieving its goals. Relative to the TANF students who did not participate in the program, the TEAP students had a higher course completion rate, higher GPA, higher “persistence + graduation” rate, and a higher full-time attendance rate. Table 3 below summarizes some major findings from the agency study.

Table 3: FY 2007 TEAP outcomes*

<table>
<thead>
<tr>
<th>Selected Variables</th>
<th>TEAP Grant Recipients</th>
<th>Non-TEAP TANF Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td>7,439</td>
<td>18,488</td>
</tr>
<tr>
<td>Course completion rate</td>
<td>82%</td>
<td>70%</td>
</tr>
<tr>
<td>GPA</td>
<td>2.79</td>
<td>2.54</td>
</tr>
<tr>
<td>Persistence + grad rate</td>
<td>82%</td>
<td>60%</td>
</tr>
<tr>
<td>Full-time attendance</td>
<td>52%</td>
<td>26%</td>
</tr>
</tbody>
</table>

*Quasi-experimental design – no random assignment of students

These results were further buttressed in the evaluation by an analysis of TEAP and non-TEAP student cohort performance in the academic terms before the implementation of the TEAP program. The two groups were then virtually identical in terms of their academic performance,
and the differential performance between the two cohorts occurred only after TEAP was implemented.

Following the creation of the 2007 TEAP program, a second, smaller, and more focused iteration of the program was created through the leadership of MDRC, the enthusiastic participation of four community colleges, and with the generous support of foundation grant funds. The 2009 program used a true experimental design, and assigned students randomly to treatment and control groups at three community colleges. The initial evaluation of the MDRC-led program showed results similar to, but less substantial than, the 2007 program. The final MDRC evaluation of the 2009 program is due in the fall of 2011, at which time the MDRC analysts would have had an opportunity—using Ohio’s longitudinal student tracking system—to assess the longer-term effects of the one-time “treatment” on student persistence and success, and also will attempt to provide an assessment of the cost-effectiveness of the program.

Change in Governors and Governance

The election of Democratic Governor Strickland in 2006 ushered in a major change in the governance of higher education in Ohio. Campaigning on a pledge to reverse Ohio’s economic decline, and using higher education as a major instrument to do so, Governor Strickland advocated for and enacted a change in state law that made the Chancellor a member of the Cabinet and a gubernatorial appointee, and that made the Board of Regents an advisory board to the Chancellor. The powers and duties previously held by the Regents were transferred to the Chancellor, and one of the first new major responsibilities mandated in law to the new Chancellor was the creation of a ten-year strategic plan for higher education. In addition, the Governor Strickland supported higher education both rhetorically and financially, providing in
his first biennial operating budget significant increases in state aid to campuses – and frozen fees for students – during tight fiscal conditions for the state.

The “Strategic Plan” was issued by Chancellor Eric D. Fingerhut in May of 2008. Among its numerous recommendations and goals was one that would result in a transformation of the state’s enrollment-based funding formula into one even more focused on state goals, much like the Challenges. In the section of the Strategic Plan titled: “Aligning Funding Formulas and State Priorities,” the Plan argued that the funding formula needed to be revised such that the interests of colleges and universities were more “systematically aligned” with the interests of the state. The Plan explicitly suggested that “increases in enrollments or degrees granted, or improvements in other activities or outcomes that advance state goals” should be rewarded with “appropriate” increases in funding, that these criteria be designed to reflect differences in institutional missions, and that the funding formula should recognize differences in the cost of delivery and should encourage cost efficiency.

A consultation was quickly launched to begin the work of revising the formula along the lines required by the Strategic Plan. Following about nine months of discussion and review, and with the strong and creative support of Ohio’s public higher education institutions and their associations – the Inter-University Council and the Ohio Association of Community Colleges – a new approach emerged for consideration in the upcoming (FY 2010 – FY 2011) state budget bill. The allocations are described in Table 4; more detail is provided in Appendix 1.

The single base subsidy formula was separated into three separate formulas, one for each major sector: community colleges, regional campuses, and university main campuses. The creation of separate formulas enabled each formula to better link the sectors’ different missions to their funding streams. One size did not fit all.
The formula for community colleges relies heavily on the previous enrollment-based formula, in large part because community college enrollments can surge and decline very rapidly—much more so than enrollments at regional campuses or universities. The new formula, however, adds to the enrollment base a component for performance based heavily on the concept of “Momentum Points” (called “Success Points” in Ohio). In addition, the community colleges and the other two sectors receive their historical share of a state allocation that helped restrain or buy down tuition. The Success Points constitute a little under 5 percent of the total subsidy for community colleges in FY 2011, with the expectation that the share will grow over time to become about 20 percent of total subsidy.

Regional campus funding is no longer based on enrollments, but instead will be based on course completions, weighted by cost of course. An additional adjustment is made to provide an increment of funding for the successful course completion of at-risk students, defined in the FY 2010–FY 2011 biennium as any student who is eligible for state need-based aid.

University main campus funding is based on a number of components, most of which are performance-based. Set asides that had been established for doctoral funding and medical education remain, but their distribution among eligible campuses will change to reflect the use of more dynamic and performance-based indicators, including degrees awarded, grant revenues, and indicators of quality. A little over 15 percent of the university main campus funding, or $306 million, is reserved for this portion.

Of the remaining core subsidy, 95 percent initially will be allocated on the basis of course completions, and five percent on the basis of degree completions in FY 2010. The portion allocated to degree completions was increased to 10 percent in FY 2011, and is expected to grow over time. Similar to the adjustment made for course completions at the regional campuses, the
course and degree completions for at-risk students are weighted to reflect the challenges that campuses experience in serving these students. The adjustment is empirically based on the difference between the completion rates of non at-risk and at-risk students. The adjustment is intended not to provide access campuses with a bonus for serving at-risk students, but rather to hold the access campuses harmless from a loss of funds that would occur if the state formulas rewarded student success without such an adjustment. Without an adjustment of this nature, success-based formulas will reward campuses with more selective admissions policies and penalize those campuses that are less selective.

Annually, all three formulas are run and the unadjusted outcomes are shared. This information lets each campus know how they are currently performing vis a vis their peers. However, a “stop-loss” provision in the initial years is included to ensure that campuses have more time to adjust their policies and programs to respond to the new performance metrics, and to ensure that no campus experiences a precipitous loss of state subsidy. The stop loss is one percent in FY 2010, two percent in FY 2011, and is expected to increase by one percentage point per year for the next biennia or two, as the effects of the new formulas are, in effect, phased in over time.30

The total allocations by purpose and sector for FY 2011 are provided in Table 4 on page 24.

Conclusion

In a span of about 25 years, state funding for higher education in Ohio evolved from a system that almost exclusively rewarded campuses for enrolling more students to one that focuses about 64 percent of total funding on outcomes, or performance. This paper described how this change
<table>
<thead>
<tr>
<th>Purpose</th>
<th>Community Colleges</th>
<th>Share of Total CC $</th>
<th>Regional Campuses</th>
<th>Share of Total RC $</th>
<th>University Main Campuses</th>
<th>Share of Total UM $</th>
<th>Grand Total</th>
<th>Share of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enrollment</td>
<td>$370.20</td>
<td>84.2%</td>
<td>$0.00</td>
<td>0.0%</td>
<td>$0.00</td>
<td>0.0%</td>
<td>$370.20</td>
<td>18.5%</td>
</tr>
<tr>
<td>Success Points</td>
<td>$18.60</td>
<td>4.2%</td>
<td>$0.00</td>
<td>0.0%</td>
<td>$0.00</td>
<td>0.0%</td>
<td>$18.60</td>
<td>0.9%</td>
</tr>
<tr>
<td>Course Completions</td>
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<td>0.0%</td>
<td>$116.30</td>
<td>87.8%</td>
<td>$964.20</td>
<td>67.7%</td>
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<tr>
<td>At-Risk Course Completions</td>
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<td>0.0%</td>
<td>$4.20</td>
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<td>$13.10</td>
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<td>$17.30</td>
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<td>$0.00</td>
<td>0.0%</td>
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<td>9.0%</td>
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<tr>
<td>At-Risk Degree Completions</td>
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<td>$0.00</td>
<td>0.0%</td>
<td>$9.20</td>
<td>0.6%</td>
<td>$9.20</td>
<td>0.5%</td>
</tr>
<tr>
<td>Medical &amp; Doctoral Funding</td>
<td>$0.00</td>
<td>0.0%</td>
<td>$0.00</td>
<td>0.0%</td>
<td>$306.00</td>
<td>21.5%</td>
<td>$306.00</td>
<td>15.3%</td>
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<tr>
<td>Tuition Subsidy</td>
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<td>11.5%</td>
<td>$12.00</td>
<td>9.1%</td>
<td>$3.70</td>
<td>0.3%</td>
<td>$66.40</td>
<td>3.3%</td>
</tr>
<tr>
<td>Total</td>
<td>$439.50</td>
<td>100.0%</td>
<td>$132.50</td>
<td>100.0%</td>
<td>$1,425.00</td>
<td>100.0%</td>
<td>$1,997.00</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Source data: Ohio Board of Regents
occurred. It is instructive to return to the factors that contributed to these initiatives, and to understand that no single factor played a predominant role.

Executive and legislative participation, direction, and leadership obviously were evident and significant in every stage described in this long process. In many cases, members of these decision-making bodies not only formally authorized or directed that certain studies or policies be examined or adopted, they or their staff personally participated in many of the formal and informal consultations, councils, and commissions to join higher education representatives and others to identify problems, consider options, and make recommendations. In general, and across many legislative and executive administrations, state policy makers were successful in skillfully prodding and supporting change in higher education without forcing policies on a recalcitrant system.

The more technical consultations, primarily implementation bodies comprised of higher education representatives, took advantage of the robust data available through Ohio’s data system and the analytical capacity of its staff to generate more concrete ideas for implementation and consider a multiplicity of funding scenarios. Importantly, these analyses allowed decision-makers to collectively identify, discuss, and address the more sensitive issue of mission differentiation. It is important to note that this sensitivity to mission was apparent early on. For example, the various components of the Selective Excellence programs were designed in part to ensure that state policies and programs equitably supported all public campuses in their missions. The creation of the Challenge programs in the late 1960s explicitly and directly funded two-year and four-year campuses in a manner that was sensitive to their missions, and which promoted state goals.
Program evaluations provided a critical examination of the programs and policies, helped fine-tune some, eliminate others that were no longer needed (such as the Two-Year Campus Service Expectations), and generally legitimize Ohio’s culture of experimentation. While external evaluations (e.g., NCHEMS’ evaluation of the Selective Excellence programs; MDRC’s evaluation of TEAP) arguably provided more disinterested analyses and are preferable, they are also more expensive than in-house evaluations. These in-house evaluations played an important role, both in a formative and summative sense.

Finally, in most cases the availability of new money was a significant factor. New state funds were made available for Selective Excellence, Two-Year Campus Performance Expectations, the Four Challenges, and TEAP, although the most recent action—the creation of the Strategic Plan formula—came when state funding for higher education was flat or declining.

While it is difficult to select the most critical factor in this mix, four factors seem to stand out. First, the early success of the Selective Excellence programs, and especially the sustained success of Research Challenge, provided both a model and an inspiration for almost all subsequent endeavors. In the absence of Research Challenge, performance funding in Ohio might have had a completely different history. Second, the existence and use of timely and reliable data seemed at times paramount. Strong political leadership, campus collaboration, and even new money are all important, but without the ability of the staff of the Board of Regents to model new ideas quickly and precisely, implement them, and evaluate them, attempts to innovate and experiment seem bound to flounder or fail. Third, sensitivity to the diverse missions of Ohio’s campuses created proposals that were deemed by the participants to be equitable, and thereby sustained the political support and goodwill needed to advance the programs to state decision-makers. Finally, the collaborative process of policy-making among all stakeholders
established the communications, knowledge base, and trust so critical to the success of inducing change in large organizations and systems. This process of decision-making, sometimes referred to as “Problems Down, Solutions Up,” worked fairly well for Ohio, and for its campuses and citizens. Launched by Chancellors who were responsive to state policy makers, and were willing to innovate and delegate, the consultations enabled campuses to speak with one voice, more or less, before legislative and executive bodies about major funding programs, and that consensus helped sustain policies over time and minimize disruptions that could have occurred when new administrations and new legislative leaders took office.
Recent notable examples include: the Lumina Foundation-funded Productivity Initiative, the Bill and Melinda Gates Foundation-sponsored Complete College America effort, and the Voluntary System of Accountability, sponsored by the Association of Public and Land-grant Universities (APLU) and the American Association of State Colleges and Universities (AASCU).


For a partial list of these consultations and committees, see http://regents.ohio.gov/financial/index.php.


The Ohio Board of Regents, *Securing the Future of Higher Education*.


With flat funding and a bi-modal pattern of enrollment growth, the formula would leverage money away from the more slowly growing university main campuses and toward the faster-growing community colleges.

The Ohio General Assembly, “Am. Sub. H.B. 117 of the 121st General Assembly.”


The Higher Education Funding Commission’s work was greatly assisted by the expert assistance provided by an external consultant, Brenda Albright. The contributions of external facilitators such as Ms. Albright are probably understated and underappreciated by readers who are not directly familiar with the process of consultation.

The Ohio Board of Regents, *An Assessment of the Four Challenge Line Items* (Columbus, OH: May 2008).

In the late 1990s, the Regents’ data system was completely reviewed and revised. The revised data system was named “HEI.”


The Ohio Board of Regents, *An Assessment of the Four Challenge Line Items* (Columbus, OH: May 2008).

Author unknown, *Research Challenge: The Results of a Decade of Investment in University Research* (Report to the Ohio Board of Regents, June 1996).


The Ohio General Assembly, “Am. Sub. H.B. 66 of the 126th General Assembly.”

The specific charge in the Strategic Plan was:

“A core principle of higher education finance is that funding formulas must be systematically aligned with the goals and priorities of the state in order for colleges and universities to have the incentives and resources they need to achieve the targets set for them.

The state’s basic funding formula, the State Share of Instruction, is currently designed to reward enrollment growth and penalize enrollment decline. This formula, as much as any other factor, has contributed to the wasteful competition among state institutions. A new funding formula will be recommended to the Governor and the General Assembly in the next biennial budget that will be aligned with the goals of this plan. The funding that is currently provided through the “Challenges” – Jobs Challenge, Access Challenge, Success Challenge and Economic Growth Challenge – will be incorporated into the new formula to better incentivize the goals of this plan.

The formula itself will be developed in consultation with legislators and university officials who will be convened immediately after the release of this report. The following principles, adapted from lists of principles developed by the members of the Inter-University Council and the Ohio Association of Community Colleges, will guide the decision-making process as this plan becomes a reality.

1. The funding formula should only reward those educational outcomes that align with Ohio’s priorities.
2. The funding formula should be designed to continuously support and improve systematic, cost-effective collaboration among state colleges and universities in the achievement of state goals.
3. The outcomes that are rewarded should take into consideration differences in institutional missions, including differences between community colleges and universities, and provide appropriate levels of state support for each mission, including not only the teaching mission of all colleges and universities, but other relevant contributions such as research, technology transfer, workforce development, globalization, and community revitalization.
4. Increases in enrollments or degrees granted, or improvements in other activities or outcomes that advance state goals, should be supported by appropriate increases in state funding. To determine what is an "appropriate" level of funding, the funding formula should be informed by systematic comparisons of Ohio institutions versus their peers across the nation, with the goal of making Ohio competitive with its peer states or peer-state institutions.
5. The funding formula should harmonize and integrate state policies regarding institutional subsidy, student tuition, student financial aid and institutional capital funding.
6. The funding formula should be designed to provide some level of predictability and financial stability for institutions.
7. The funding formula should include an incentive for each campus to develop excellence in academic programs and disciplines significant to its mission, region, and state priorities and goals.
8. The funding formula should recognize differences in academic program cost and should encourage cost efficiency among similar programs.
9. The details of the funding formula should be the outcome of an open consultative process with broad participation.”
Ohio’s Success Points include:

1. Number of students who either:
   a. Complete their first remedial course at that institution in a given year;
   b. Successfully complete a developmental Math course last year, who subsequently enrolled in a college level Math course (at any public college or university) either last year or in the current year; and
   c. Successfully complete a developmental English course last year, who subsequently enroll in a college level English course (at any Ohio public college or university) either last year or in the current year. Note: Each of the developmental components is weighted by 2/3 for a maximum possible award of 2 points per student.

2. Number of students earning their first 15 semester credit hours of college level course work at that institution by a given year.

3. Number of students earning their first 30 semester credit hours of college level course work at that institution by a given year.

4. Number of students who earn at least one associate degree, from that institution, in a given year.

5. Number of students who completed at least 15 semester credit hours of college level course work at that institution and subsequently enrolling for the first time at a four year college or university, in Ohio. For the purposes of this initial data analysis, the transfer is measured as subsequent enrollment in a USO university main or regional campus. The intent is to expand the transfers to include private colleges, as well.

Each community college receives one point for each measure; points are summed for each campuses and all campuses, and campus subsidy allocations are determined by their share of total points multiplied by the total allocation of subsidy available for distribution. In FY 2011 it is estimated that about $22 million will be available for distribution through the Success Points allocation.

The use of this measure of financial status as the sole indicator of an “at-risk” student was adopted primarily because it was the one indicator for which nearly universal and current data were available. Consultation members recognized that this single metric was an incomplete measure, and charged themselves to develop a more comprehensive measure, which they did. At the time of this writing, a revised operationalization was under review. The revised measure includes indicators of wealth, age, academic preparation, and race/ethnicity. The use of the more complex measure has the effect of driving more money to campuses that successfully serve more “at-risk” students.

That is to say, no campus would experience a loss of more than one percent of its previous year’s support in year one, no more than two percent of its previous year’s support in year two, etc.

Due to space limitations, these analytical activities are not fully fleshed out in this analysis, but plenty of evidence remains available on Board of Regents’ web sites. See for example http://regents.ohio.gov/financial/hefc/index.php.


The processes included in higher education information system also minimized – but probably did not eliminate -- the opportunities for any campus to “game” the system. All data submitted by campuses are subject to internal automated logical edits as well as staff review, and the state conducts periodic enrollment and financial aid audits, as well as annual financial audits, of all campuses. In addition, some data sources – such as those used in Research Challenge distributions – came from unimpeachable national sources, such as the National Science Foundation. Finally, the structure of programs designed to respect campus missions – for example by providing additional
funding to at-risk students – minimized any incentive that less selective campuses might have to become more selective.
Equalizing Credits and Rewarding Skills:
Credit Portability and Bachelor’s Degree Attainment

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Draft: Please do not cite without permission from the author.

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February 15, 2011

The collected papers for this conference can be found at www.aei.org/event/100346.
Introduction

“College for all” has become a mantra of politicians, policy makers, and private foundations. President Barack Obama pledged in his first speech to a joint session of Congress in February 2009 that: “We will provide the support necessary for you to complete college and meet a new goal: by 2020, America will once again have the highest proportion of college graduates in the world.”¹ Many foundations followed, with the Lumina Foundation for Education announcing Goal 2025, which aims to increase the percentage of Americans with high-quality degrees and credentials to 60 percent by year 2025.² These commitments represent a shift in the national agenda, from simply getting students into higher education to getting them to finish educational credentials.

This is an important shift, but one that is easier endorsed than implemented. American higher education has historically been much more successful at enrolling students than in getting them to graduate. Between the high school cohorts of 1972 and 1992, the rate of entry into higher education increased from 48 percent to 71 while the bachelor’s degree completion rates decreased: 51 percent of the class of 1972 and 46 percent of the class of 1992 graduated with a bachelor’s degree within 8 years of high school graduation.³ A different way of examining the issue is to consider educational attainment of different birth cohorts, which reveals that over the course of the 20th century, the proportion of young adults with some college has increased, but the proportion with bachelor’s degrees has at best remained stable.⁴

In the midst of the numerous challenges to reaching the completion goal, one issue that is receiving increasing attention is students’ trajectories through higher education. Even a cursory examination reveals that institutions operate under a premise of institutional autonomy, which gives them independence in crafting curricula and determining what and how specific courses count toward their degrees. Students, on the other hand, operate under what could be referred to
as a premise of credit portability, which assumes that one earns a degree by accumulating credits at multiple institutions. Students act on their premise – a majority of them attend more than one institution – and many of them get disappointed when credits they have earned at one institution do not count at another.

An example provided recently in the *Chronicle of Higher Education* sounds much too familiar:

“Take a student who completes Technical Mathematics I for four credits at Bronx Community College, and consider the system's wacky credit-transfer rules. If that student transferred to CUNY's College of Staten Island, John Jay College of Criminal Justice, or New York City College of Technology, those credits would be accepted as if for a similar course offered there (although for only three credits at John Jay). At three other senior colleges in the system, the Bronx course would transfer only as elective credit, which tends not to count toward a major. Only Staten Island would apply the transfer credit toward general-education requirements. And five other colleges in the system wouldn't accept transfer credit at all — unless, in two cases, the student had completed an associate degree.”

The lack of consistency and transparency, even within this specific system, is glaring. Calls to reform the current approach to credit portability seem inevitable. Yet, empirical evidence of the effect of credit portability on bachelor’s degree completion, or other outcomes such as time to degree or credits to degree, does not support this call to action. Although the research is not definitive, and there are still unanswered questions, there is no empirical evidence to suggest that streamlining credit transfer will increase degree attainment. The higher education system as a whole is inefficient, and credit transfer and portability issues contribute to this inefficiency, but they are far from the primary culprit. This does not mean that we should not work on streamlining credit accumulation, nor that the transfer process should not be more transparent and consistent. But it does mean that focusing on credit transfer as the key strategy for increasing bachelor’s degree attainment is inadvisable. More recent efforts to define and assess what students actually know, as opposed to how much time they spend in the classroom, are not empirically validated as of yet, but are worthy of attention, both for their potential to
increase credit production as well as to transform our conception of and approach to higher education.

**Patterns of Multi-Institutional Attendance**

Students’ pathways through higher education have grown increasingly complex, with multi-institutional attendance being the modal pattern today. In the sample examined in this report, just over 50 percent of students attended multiple institutions and approximately 20 percent attended more than two. Analyses presented in this report rely on transcript data from the 1992 high school students who entered higher education within approximately two years of high school graduation and were followed through 2000. The report does not consider all of the possible pathways through higher education, but focuses on a few that are analytically relevant to the concerns regarding credit transfer and have an adequate number of cases for examination.

Figure 1 presents some of the complexities of students’ pathways through higher education. Among students who entered four-year institutions, approximately half attended multiple institutions. However some of those attended other four-year institutions while others attended different types of institutions – a particularly large group in the latter category are “reverse transfers,” i.e., students who attend two-year institutions after matriculating into four-year institutions. Students who begin in two-year institutions follow a similar pattern, with approximately half of them attending multiple institutions. In order to earn a bachelor’s degree, students who begin in two-year institutions need to transfer to four-year institutions. Approximately three-quarters of those who attend multiple institutions transfer to four-year institutions – that represents approximately one third (36 percent) of all students who begin their postsecondary journeys in two-year institutions.
**Figure 1. Attendance patterns of students starting at four-year and two-year institutions**

Bachelor’s Degree Attainment

Are students who attend multiple institutions less likely to complete bachelor’s degrees? Considering students who enroll in four-year institutions, descriptive results suggest that those who attend multiple institutions have a lower rate of degree attainment than those who stay in one institution (64 percent versus 74 percent). Students who begin at two-year institutions have a particularly low rate of bachelor’s degree completion. However, that is largely because they do not transfer to a four-year institution – among students who transfer to a four-year institution, the completion rate is 53 percent.
Students who follow different pathways through higher education vary along multiple dimensions. Consequently, lower bachelor’s degree completion rates of students who change institutions and especially those who start at two-year institutions may reflect these individual differences. Figure 2 shows results from a logistic regression model controlling for demographic characteristics, academic preparation, and enrollment patterns (delayed entry and part-time and continuous enrollment). All of the control variables are held at the mean when predicting bachelor’s degree attainment. Even this basic set of control variables eliminates the gaps between the three groups of students and renders them not statistically significant. Whether students start at a four-year institution and attend only one, whether they start at a four-year institution and attend multiple, or whether they transfer from two-year to four-year institutions, they have similar likelihoods of bachelor’s degree completion. Other recent studies focusing on community college transfers have similarly reported no differences in bachelor’s degree attainment between community college transfers and rising juniors who start at four-year institutions.\(^{11}\)

**Figure 2. Predicted bachelor's degree completion, by attendance pattern**

![Bar chart showing predicted bachelor's degree completion rates by attendance pattern.](image)

Note: Predictions based on a logistic regression model controlling for demographic characteristics, academic preparation, and enrollment patterns.
Figure 2 combines all students who start at four-year institutions and attend multiple colleges and universities into a single category. However, this category includes two distinct groups: students who attend multiple four-year institutions and students who attend multiple institutional types. Table 1 reports bachelor’s degree completion rates for each of these sub-groups. If multiple institutions attended are all four-year institutions, students’ completion rate is actually higher than for those who attend only one institution (82 versus 74 percent). Since students who engage in lateral transfer are more socioeconomically advantaged, their higher likelihood of degree attainment may reflect advantages in knowing how to navigate the higher education system. For those who attend multiple institutions which are not all four-years, as would be expected, the completion rate is much lower. Many of these students are “reverse transfers,” who tend to come from less advantaged backgrounds and have lower academic performance. A regression model controlling for a range of individual differences does not eliminate gaps in degree completion between these two groups of students. But results from another recent study, including extensive controls and selection adjustments, indicate that lateral transfers (i.e., students transferring among four-year institutions) have the same completion rate as those who attend only one four-year institution. Reverse transfers on the other hand continue to lag slightly behind.

Students who move across four-year institutions have similar graduation rates as do those who attend only one four-year institution, which suggests that credit transfer is not a major issue for this group, or at least not enough to deter them from degree completion. Similarly, no gap between students who transfer from two-year to four-year institutions and students who attend only one four-year institution implies that credit portability does not pose a challenge to their degree completion. These findings do not suggest that students are not losing credits as they move across institutions, but they imply that if students are losing credits, that is not deterring
Table 1. Bachelor's degree completion, by attendance pattern

<table>
<thead>
<tr>
<th></th>
<th>BA completion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Starting at a four-year institution</strong></td>
<td></td>
</tr>
<tr>
<td>Only one four-year institution</td>
<td>74.32</td>
</tr>
<tr>
<td>Multiple institutions</td>
<td></td>
</tr>
<tr>
<td>Multiple four-year institutions</td>
<td>82.31</td>
</tr>
<tr>
<td>Multiple institutional types</td>
<td>50.34</td>
</tr>
<tr>
<td><strong>Starting at a two-year institution</strong></td>
<td>19.53</td>
</tr>
<tr>
<td>Transfer to a four-year institution</td>
<td>53.02</td>
</tr>
<tr>
<td><strong>Other attendance pattern</strong></td>
<td>--</td>
</tr>
</tbody>
</table>

Source: Author's calculations based on NELS1988-2000.

them from completing their degrees. However, even if students following different pathways through higher education have similar degree completion rates, they may vary on other outcomes such as time to degree and credits to degree.

Time to Degree and Credits Completed

Table 2 considers time to degree (i.e., time from entry into higher education to bachelor’s degree completion) for students following different pathways through higher education. Descriptive results suggest that students who attend multiple institutions take longer to finish their bachelor’s degrees, which is especially the case for students who begin in two-year institutions and subsequently transfer to four-year institutions. However, students who attend multiple institutions, and particularly those who begin in two-year institutions, tend to also interrupt their enrollment, which delays degree completion. The second column thus considers only students who were enrolled continuously.\textsuperscript{15} Students who start at four-year institutions have similar time to degree completion regardless of the pathway travelled. However, students who begin in two-year institutions and subsequently transfer to four-year institutions take almost an extra year to complete their degrees, even if they do not interrupt their enrollment. Students who
begin in two-year institutions are not only more likely to interrupt their enrollment; they also
differ from four-year entrants in many other respects, some of which, such as having to take
remedial courses, can substantially lengthen time to degree.

| Table 2. Time to degree for bachelor's degree recipients, by attendance pattern |
|---------------------------------------------------|------------------|--------------------|
|                                                   | Time to BA       | Time to BA,        |
|                                                   |                  | continuous enrollment |
| Starting at a four-year institution               | 4.42             | 4.31               |
| Only one four-year institution                    | 4.25             | 4.21               |
| Multiple institutions                             | 4.60             | 4.41               |
| Multiple four-year institutions                   | 4.44             | 4.28               |
| Multiple institutional types                       | 4.81             | 4.59               |
| Starting at a two-year institution                |                  |                    |
| Transfer to a four-year institution               | 5.43             | 5.20               |

Source: Author's calculations based on NELS1988-2000.

A more accurate representation of the role of credit transfer can be obtained not by
relying on proxies such as time to degree but by examining the number of credits earned. If
students are losing credits in the transfer process, those who follow alternative pathways through
higher education should accumulate more credits. Table 3 reports the total number of credits
earned by students who completed bachelor’s degrees following different pathways through
higher education. The table includes two measures of credits: one is the total number of credits
while the other one is the total number of credits earned through enrollment (which excludes
dual enrollment credits and credits earned through examination). Considering the total credits
earned, students who attend multiple four-year institutions complete approximately 5 credits
more than those who attend only one four-year institution on their path toward a bachelor’s
degree. When students move across institutional types, the gaps are slightly larger. Students
who start at four-year institutions and attend multiple institutional types earn 8 credits more for
their bachelor’s degrees than those who attend only one four-year institution. The biggest
difference is for students who begin in two-year institutions – these students earn over 9 credits
more than students who attend only one four-year institution.

Table 3. Credits earned by bachelor’s degree recipients, by attendance pattern

<table>
<thead>
<tr>
<th>Attendance Pattern</th>
<th>Total credits</th>
<th>Total enrolled credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Starting at a four-year institution</td>
<td>137.37</td>
<td>134.33</td>
</tr>
<tr>
<td>Only one four-year institution</td>
<td>134.41</td>
<td>131.86</td>
</tr>
<tr>
<td>Multiple institutions</td>
<td>140.51</td>
<td>136.94</td>
</tr>
<tr>
<td>Multiple four-year institutions</td>
<td>139.10</td>
<td>135.58</td>
</tr>
<tr>
<td>Multiple institutional types</td>
<td>142.31</td>
<td>138.74</td>
</tr>
<tr>
<td>Starting at a two-year institution</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transfer to a four-year institution</td>
<td>143.63</td>
<td>142.14</td>
</tr>
</tbody>
</table>

Source: Author’s calculations based on NELS1988-2000.

The difference between students who start at two-year versus four-year institutions has
been frequently noted in policy discussions, serving as a critique of the current system and a call
for dealing with credit portability issues. However, this difference needs to be placed in
context. One of the most notable findings in Table 3 is that all groups of students are earning
more than the 120 credits typically thought to be required for a bachelor’s degree. Even students
who attend only one four-year institution appear to be earning 134 credits, 14 credits more than
would be typically expected – this is more than the gap between students starting at two-year
versus four-year institutions. Since students who attend only one four-year institution are not
changing schools, these “excess” credits are not a consequence of credit transfer issues.

Analysts often cite the high number of credits completed by students who transfer from
two-year institutions as a concern. In California, for example, a recent policy report included a
section titled “Many Transfer Students Graduate from a University with ‘Excess’ Units.” This
report cited a finding from a recent study of the California State University (CSU) which found that students who transferred from community colleges to four-year institutions graduated with an average of 141 semester units, which is remarkably similar to the national estimates presented herein, and indeed much in excess of the 120 credits typically considered to constitute a bachelor’s degree. The policy report then proceeded to consider different reasons for these “excess” units. However, at least in the CSU system, there appears to be no gap between credits earned toward a bachelor’s degree between community college transfer students and students who begin in the CSU system. The same CSU report which noted that community college transfers graduated with 141 credits also reported that native CSU students graduated with an average of 142 credits. Similarly, a recent report from Florida indicated that Associate of Arts (AA) transfers completed 137 credits before graduation while native four-year students averaged approximately 133 credits. While Florida data reveals a four-credit difference between four-year and transfer students, that is small compared to the 13 “excess” credits completed by four-year students in pursuit of a bachelor’s degree. Hence, the system does appear to be inefficient, but transfer is not the primary culprit for this inefficiency.

Even if there is a difference in the number of credits completed by students who transfer from two-year institutions and those who start at four-year institutions, it is not self-evident what that difference implies. On the one hand, it could reflect an issue with credit transfer. On the other hand, students who transfer and those who do not are different on many dimensions. It could be that transfer students would have completed more credits even if they started at a four-year institution. Isolating the causal effect of transfer is very challenging, not only because of individual differences and self-selection, but also because of the issue of appropriate comparison groups (e.g., should transfer students be compared to all four-year students or to rising juniors, should all transfer students be considered or only those who reach a status of a junior, etc.).
least one recent study, which used propensity score methods to compare community college transfers with rising juniors who started at four-year institutions suggests that, after adjustments for individual characteristics, there is no difference between the two groups in the number of credits earned. These findings imply that credit transfer is not a major hindrance on the path toward a bachelor’s degree.

Some readers may take issue with this interpretation, which suggests that no difference in credits earned between transfer and non-transfer students after controls (or other statistical adjustments) implies that credit transfer is not an issue. Some of the characteristics included in the models, such as family background and academic preparation, may be related to credit transfer issues. If students from less advantaged family backgrounds and with lower levels of academic preparation are not completing degrees because they are losing credits, then those individual characteristics could in part capture issues regarding credit portability. However, those groups of students tend to have a difficult time navigating the higher education system, even when staying at one institution. A recent study reported that 23 percent of students in private two-year institutions and 46 percent of students in community colleges stated that they have taken a course that does not apply toward their degree. These students were not transferring (at least not yet), but even if they stayed at their original institutions they would have likely accumulated more than the minimum number of credits required for a degree. This implies notable inefficiencies in the system, but these inefficiencies are not related to credit portability.

Other Considerations

There are a number of complications in developing an accurate understanding of whether and how much credit transfer is an issue in degree attainment. One concern revolves around
what is analyzed and who is being asked questions. A recent audit of the Minnesota State Colleges and Universities analyzed college records of a stratified random sample of students who transferred within the system. The report concluded that only 9 percent of students lost credits in the transfer process, and among those, the median number of credits lost was 6. On the other hand, a recent survey of community college students in Maryland suggested that approximately 60 percent of students lost at least some credits in the transfer process, with approximately one third losing between 1 and 6 credits. These two examples present very different portrayals of how many credits are lost in the transfer process, and how many students are affected. Of course, they are not directly comparable since they use vastly different methods and focus on different populations – and that is precisely the point, it is difficult to gain an adequate understanding of the magnitude of the issue without consistency in measurement. Moreover, even within a single system there is much variation across schools and majors. The Minnesota study for example noted differences between psychology and accounting graduates, with the latter being substantially more likely to lose credits in the transfer process. These findings imply that specific systems or specific programs may require fine-tuning, but not necessarily that the whole system requires an overhaul.

The difference between Minnesota and Maryland studies may in part reflect the difference between analyzing credits recorded on transcripts versus students’ self-reports. Leaving aside the issue of students’ recollection of credits lost, the difference between official representations and students’ reports may in part emerge because the two are referring to different aspects of credits. Transcript audits and general counts of credits, such as those reported herein, count only the total number of credits, where the loss may not appear to be as great, at least not in comparison to students who begin in four-year institutions. However, students may not be thinking only about the number of credits but also about the type of credits
transferred. The Minnesota audit study was accompanied by a survey of transfer students. The two studies are not strictly comparable since the survey was not administered to the same students, and it included transfers from out of state, but the survey responses can still provide some insights. A third of the students in the survey rated the transfer process as fair or poor (although the audit reported that only 9 percent of students lost credits). Moreover, when students encountered issues in the transfer process, some of them noted that the credits did not transfer as they anticipated – e.g., credits transferred as electives as opposed to toward their major. Depending on the number of credits students came in with, this may not show up as “excess” credits on a transcript audit, as it would not necessarily require taking more classes, only different types of classes, but students may still feel like they lost credits since not everything counted as anticipated.

In addition, some readers may suggest that the estimates presented in this report for two-year transfer students underestimate the problem of credit transfer/portability. The estimates of bachelor’s degree completion compare students who transferred from two-year to four-year institutions to students who started and stayed at one four-year institution. By focusing on students who have transferred, these estimates ignore the possibility that credit portability may play a role in who transfers in the first place. It is possible that students self-select into the transfer category, based in part on the likelihood of credit preservation. If students who transfer are the ones least likely to lose credits, differences in degree attainment (or credits to degree) between transfer students and native four-year students may be small. Perhaps the issue is not that students lose credits in the transfer process but that they do not transfer in the first place due to either perceived or anticipated loss of credits (e.g., worry about losing credits, or apply to a four-year institution and realize that many credits will not transfer). If this is the case, then the focus needs to be on the transfer process, not necessarily on what happens to students who
transfer. One way to consider this issue is to examine whether efforts to standardize credits, such as state-wide articulation policies, increase transfer rates.

Articulation Policies and Transfer

Many states have adopted state-wide articulation policies in recent decades, in an effort to manage the flow of students (and credits) across institutions. The most persuasive assessment of the effectiveness of articulation policies would result from utilizing longitudinal state data on transfer before and after policy implementation. However, data collection generally developed as a response to state mandates regarding articulation; thus even states that collect data on transfer do not have comparable information before they implemented articulation policies. Lacking longitudinal state data, researchers have relied on exploring variation in articulation policies across states using nationally representative datasets. These studies find no relationship between the presence of statewide articulation policies and transfer rates.

This null finding holds whether all community college students are considered or only those aspiring to earn bachelor’s degrees. It also holds when policies are disaggregated to consider their overall strength or specific components (e.g., common course numbering or common general education requirements). Moreover, at least one study found that the presence of articulation policies does not reduce time to degree or credits needed to complete a bachelor’s degree. These findings indicate that articulation policies do not ease the transfer process, at least not in ways that would facilitate greater transition from community colleges to four-year institutions. It is possible that national level studies are not able to identify the effects of articulation policies due to vast variation across states. A better place to look may be specific state contexts. Although states do not have reliable data for years before articulation policies
were first implemented, many of them have recent data that can provide some insights on the issue.

**California**

One of the key components of California’s Master Plan for Higher Education is transfer from community colleges to the University of California (UC) or California State University (CSU) systems. California’s legislature has long experimented with different strategies for facilitating transfer, while affording institutions a great deal of autonomy. A recent attempt at standardization included development of ASSIST (Articulation System Stimulating Interinstitutional Student Transfer) – an online repository of information which allows students to see whether and how their courses at community colleges will transfer to any of the four-year California institutions. More recently, California has introduced the Intersegmental General Education Transfer Curriculum (IGETC). Generally referred to as the “core transfer curriculum,” IGETC is a standardized general education program that students can use to fulfill lower-division general education requirements, although it is neither required for transfer nor a guarantee of admission for potential transfer students and a number of science, nursing, and engineering schools within the UC system do not accept it. In yet another attempt to streamline the transfer process, in the fall of 2010, California passed the Student Transfer Achievement Reform Act, which guarantees community college students who earn certain associate’s degrees meant for transfer acceptance into a California State University baccalaureate program with junior status.

If California is tracking transfer data, such as transfer rates, degree completion, time to degree and credits earned, in a few years researchers will be able to evaluate the impact of this latest intervention. But if the past, or other states, are any guide, this new initiative is not likely
to lead to notable improvements in transfer, and by extension overall bachelor’s degree attainment in the state. The focus of this policy, as well as earlier endeavors, is to preserve credits for students who make the transition to four-year institutions. That is an essential goal, and one that could be pursued as a matter of fairness and equity. However, its relationship to degree completion is less clear. California Community College students who transfer to four-year institutions have high BA completion rates – 80 percent of community college transfers to UC graduate within four years of transfer, and approximately two-thirds of transfers to CSU graduate within six years. Rates for cohorts beginning in UC and CSU are not provided, so a direct comparison is not possible, but those seem quite high compared to average rates for public four-year institutions. However, the transfer rate in California is very low – only approximately 20 percent of community college degree-seeking students transfer to four-year institutions. Moreover, transfer rates appear to be largely stable over time. Persistent efforts to address articulation in California have thus been accompanied with relatively low and seemingly stagnating transfer rates.

**Florida**

Florida has long had a statute which guarantees junior status to community college transfers who complete an associate of arts (AA) degree. Earning an AA is a well-established pathway to four-year institutions, and approximately three quarters of transfers complete an AA before moving to a four-year institution. Moreover, AA transfers have comparable educational outcomes to four-year students. Recent data available for the University of Florida, for example, indicate that the six-year graduation rate for the first-time-in-college four-year students is virtually identical to the four-year graduation rate of AA transfers. There is also very little difference between transfer students and four-year entrants in credits earned to degree – AA
transfers earn only approximately 4 credits more than students who begin in four-year institutions.\textsuperscript{35} Thus, degree attainment and credits to degree do not appear to be major issues, even if slight adjustments to eliminate the credit-to-degree difference could be considered.

Although AA transfers have remarkable success rates, a very low percentage of community college students earn AA degrees and a small percentage transfer to four-year institutions (with or without AA degrees). Among first-time degree-seeking students in community colleges, only approximately one quarter complete an AA degree. If a sample is restricted to students who complete at least 12 non-remedial credits, the AA completion rates would increase to approximately one third.\textsuperscript{36} Students who complete AA degrees have very high transfer rates (three quarters of them transfer to four-year institutions); however, since they constitute a very small portion of the total degree-seeking student body in community colleges, and since a relatively small proportion of students transfer in Florida without earning an AA degree, the overall transfer rate is not high – it is at best average.\textsuperscript{37} Florida’s 2+2 system thus produces very good outcomes for students who earn associate’s degrees and transfer to four-year institutions. However, this category includes a small proportion of degree-seeking students who begin their postsecondary journeys in community colleges. Consequently, this strategy is not a likely candidate for increasing the overall bachelor’s degree production.

\textit{Arizona}

Another state that has invested much effort into transfer and articulation is Arizona. Arizona has adopted two strategies for facilitating transfer: Arizona General Education Curriculum (AGEC) and Transfer Pathway Degrees. A recent evaluation of Arizona’s approach to transfer has received much attention, in particular for reporting that over the five cohorts studied, students from each succeeding year graduated with almost two and a half fewer credits,
leading to a 12 credit difference over five years. This is a remarkable accomplishment. Although, it is not clear what caused this reduction in credits to degree, since the same pattern was observed for all transfer groups (those with AGEC, those with transfer degrees, and those with just transfer credits). It is also not evident whether this decrease in credits to degree is a consequence of policy interventions or a reflection of changes in student characteristics or other factors (e.g., if demographic and academic preparation profiles for students in Arizona have changed over this time period). AGEC is not likely to be responsible for this change since almost half of students interviewed were either unfamiliar or unclear about AGEC requirements.

Students who complete AGEC graduate with about three and a half fewer credits than students who enter with transfer credits only. This difference is relatively low and likely to be at least in part related to academic preparation. The report notes for example that AGEC students had significantly higher GPAs after two and four semesters than students with just transfer credits. Since academic performance is correlated over time, these students were likely higher performers to begin with. Additionally, students who completed transfer degrees before transitioning to four-year institutions had a similar GPA and completed a similar number of credits to degree as did students who entered with transfer credits only. Since the analysis of credits to degree does not control for prior academic preparation, it is not clear whether academic preparation explains the difference between AGEC and other transfer students. Moreover, the evaluation report focused on comparing different groups of students who transferred to four-year institutions, and thus did not include a discussion of transfer rates – whether transfer rates have changed following the implementation of specific policies is a crucial question that needs to be addressed.

This brief discussion of specific state efforts, coupled with the earlier discussion of national data, highlights one key issue: transfer. After students transfer from two-year to four-
year institutions, they seem to do relatively well, with respect to degree completion, and even credits to degree. However, average transfer rates are quite low. Moreover, low transfer rates in states that have invested much energy in articulation and little evidence of change over time (where available) suggest that articulation policies do not increase transfer rates. At the core, they are not intended to – articulation policies are intended to preserve credits for students who transfer. However, there seems to be an expectation that articulation policies will have a “spill over” effect and increase transfer. The available evidence does not support that expectation.

Since bachelor’s degree completion rates are typically similar for students who transfer and for those who begin in four-year institutions, and since articulation policies do not increase transfer, it is not clear that articulation policies can do much to increase the production of bachelor’s degrees. This does not imply that articulation policies are not needed and that they should not be developed to make the transfer process easier and more transparent. However, articulation policies do not represent a compelling strategy for improving bachelor’s degree completion.

Extensive research on transfer identifies myriad factors associated with whether students make the transition from community colleges to four-year institutions. One insight from this research, which is obvious but seems to be often neglected in discussions of transfer, is that the same factors that facilitate or hinder educational success and degree completion more broadly are the factors that are related to transfer. For example, students who are well prepared academically and have high educational expectations are more likely to transfer while those who transition into roles typically associated with adulthood, such as employment and parenthood, are less likely to make this educational transition. Moreover, students’ socioeconomic background is strongly related to all educational outcomes, including transfer, even after controlling for other factors. This may at least in part reflect socioeconomic differences in students’ “know how” about the higher education system. Recognizing that transfer is akin to other educational transitions and
addressing these common factors is likely to do more to increase transfer rates than focusing on the unique aspects of this transition (e.g., articulation policies).

**Alternative Ways of Earning Credits**

If improving credit transfer among higher education institutions is not likely to lead to an increase in bachelor’s degree attainment, thinking about other ways to earn credits may be productive. Credit transfer among higher education institutions rests on “content similarity” – courses are deemed equivalent if their content (usually gleaned from syllabi) is deemed equivalent. Another strategy for awarding credits is to focus on what students can do – i.e., award credits to students who can demonstrate specific knowledge and skills.

One well-known program following this logic is Advanced Placement (AP). Students who complete AP coursework can take an AP exam, which assesses knowledge in a specific subject area. Students who obtain a certain score on the AP exam can get an exemption from introductory courses in the subject and/or receive college credits. Taking AP coursework in high school increases the likelihood of degree attainment and decreases time to degree, even after extensive adjustments for selection into AP coursework.\(^4\) In the sample examined in this study, students who earned credit by examination (including Advanced Placement (AP), College-Level Examination Program (CLEP), and institutional challenge examinations) indeed earned fewer credits through enrollment than those who had no such credits. However, students do not appear to maximize the use of these courses on their path toward a degree. College graduates with examination credits earned 130 credits through enrollment and 142 credits total – both above the expected 120 credits typically thought to constitute a bachelor’s degree. Students without examination credits earned a total of 138 toward their bachelor’s degrees.
More commonly, demonstrating competencies to earn college credits is associated with learning outside of the classroom and includes initiatives such as prior learning assessment (PLA) and competency based programs. There are a number of different strategies that are subsumed under the general PLA category. Perhaps two of the most common are PLA credits awarded by individual institutions (assessed through methods such as standardized examinations or portfolios) and PLA credits recognized by the American Council for Education (ACE).

ACE began evaluating military training and recommending its acceptance for college credit following WWI and today also evaluates many corporate training programs. Rigorous evaluations of whether these strategies enhance degree completion or reduce time to degree (and credits to degree) are absent to date. Analyses of PLA’s usually focus on only one or a few institutions and have virtually no controls for students’ characteristics. A large-scale endeavor including 48 institutions led by the Council for Adult and Experiential Learning, or CAEL, reported that adult students who completed PLA credits had higher graduation rates and shorter time to degree. The study could not adjust these estimates for a range of confounding factors or student selection, making the results largely suggestive. Moreover, the use of the PLA’s by students was relatively low among this adult population – only 25 percent earned any PLA credits. This number likely overestimates the prevalence of PLA’s in higher education as a whole since a) institutions selected to participate in the study where the ones offering PLA credits; b) reliance on PLA credits is likely to vary by student age; and c) reliance on PLA credits is likely to vary by institutional type and selectivity.

Instead of awarding a few credits to students for prior learning, some initiatives have aimed to organize an entire degree program around what students know and can do. Several institutions have adopted this competency-based approach, with perhaps the best-known being the Western Governor’s University (WGU). WGU is an online university founded in 1997 with
a mission to expand access to higher education by “providing a means for individuals to learn independent of time and place and to earn competency-based degrees and other credentials that are credible to both academic institutions and employers.” Students can demonstrate competencies through a range of different strategies, from standardized exams to problem-solving assignments, special projects, and research papers. WGU focuses on non-traditional students (average age of 36), two thirds of whom are working full-time. According to the website WGU graduates over 2,200 students each year in over 50 degree programs.\textsuperscript{43} This seems like a sensible approach – focus on what students know as opposed to how many hours they are sitting in a classroom – and is obviously working for some students who are earning degrees.

It is difficult, however, to make any assessment of the contribution of WGU (or similar competency-based programs) to the national degree attainment rate. Independent evaluations of the program are not available. Moreover, WGU provides information online about graduates’ labor market outcomes but not on factors such as persistence, completion rates, and time to degree. Comparisons of these metrics for competency-based institutions and traditional higher education institutions are needed to begin the process of understanding whether, under what conditions, and for whom could this be an effective strategy for facilitating degree attainment. Without answers to these basic questions, it is not clear whether expanding competency-based programs could contribute to increasing the overall bachelor’s degree production rate.

**Conclusion**

The disconnect between students’ pathways through higher education and institutional practices focusing on institutional autonomy is obvious to even a casual observer of higher education. Students who change institutions go through a complex set of often opaque processes that vary
across institutions if they wish to transfer credits earned at different colleges and universities.\textsuperscript{44} While the procedures often seem arcane and while almost everyone knows of students who lost credits in the transfer process, there is no empirical evidence to suggest that credit portability is a key hindrance to degree attainment. Students who attend multiple four-year institutions (i.e., ‘lateral transfers’) do not have a lower likelihood of degree attainment (nor do they take longer or earn more credits) than students who attend only one four-year institution. Students who start at two-year institutions and subsequently transfer to four-year institutions have similar educational outcomes to students who begin in four-year institutions, after adjusting for individual differences. Moreover, statewide articulation policies do not increase either the likelihood of transfer or the likelihood of degree completion for transfer students. This does not mean that articulation policies should be abandoned. They simplify the transfer process and thus may benefit both students and institutions.\textsuperscript{45} However, efforts to improve credit transfer, including articulation policies, are not likely to make a substantial contribution to increasing the bachelor’s degree attainment rate.

This does not mean that all is well in higher education. A large proportion of students starting in four-year institutions are not graduating, the majority of those who begin in two-year institutions with an intention to transfer do not actually make a transition to four-year institutions, and even when students complete degrees, they are taking an increasing amount of time to graduate. Moreover, students, regardless of the pathway travelled through higher education, are completing many more than the 120 credits typically considered necessary for a bachelor’s degree. Even when they attend only one four-year institution, they seem to accumulate over 130 credits (and more in some systems).\textsuperscript{46} This could reflect a number of underlying issues, from poor advising to what has recently been described as a “motivated but directionless” generation – students entering higher education today are very motivated and have...
high ambitions, but many of them have few if any concrete plans for realizing those ambitions
and thus spend a certain amount of time floundering through higher education. Changing
programs or majors, or taking classes without adequate knowledge of whether and how they
count toward the degree could all contribute to the high credit accumulation even among students
who do not change institutions.

It is also possible that students are not as focused on earning degrees efficiently as policy
makers and academics seem to think. Many recent (and historical) descriptions of residential
four-year colleges emphasize the importance of social life as opposed to academics. College is
a component of transition to adulthood, not just a place to earn a degree. Recent changes in
financing of higher education may increase pressures toward efficiency, although for many four-
year students, having “a college experience” is crucial, and they are willing to go into debt for
it. At the same time, an increasing proportion of students attending higher education are “non-
traditional” – they are not 18-22 year olds focusing exclusively on their studies, but individuals
of all ages who are often juggling multiple demands of work, marriage, and parenthood. A
policy that targets only one issue (transfer of credits) and does not tackle the complexity of
students’ lives in which credits are only one (and perhaps not even the primary) concern on a
journey toward a degree may not have much impact on degree attainment. Untangling these
issues awaits future research, but for now, the existing evidence suggests that credit portability is
not a major hindrance to degree attainment for students who begin in either two-year or four-year
institutions.

Another strategy for attempting to increase degree attainment is to award credits for work
completed outside of the traditional higher education institutions, either by awarding credits for
prior learning or organizing programs around demonstration of competencies. To date, rigorous
assessments of these efforts are lacking, making it impossible to determine whether and how
much they can contribute to degree attainment. Assessing these types of programs with respect to persistence, degree completion, and time to degree is crucial.

A careful assessment of initiatives that focus on what students know is important not only for making claims about specific programs but also for pushing the boundaries of our thinking about higher education. So far, we have focused much attention on credit hours, granting degrees based primarily on the amount of time students spend in the classroom (and can earn a passing grade) as opposed to whether they have learned anything or have any specific skills. This issue – what do the degrees actually mean, and what specific competencies they represent – is not only a question for a few innovative programs; it is a question that should be asked by higher education as a whole. Recent efforts led by the Lumina Foundation, including Tuning USA and degree qualification profiles, present movements in this direction. These efforts are too recent to speculate about their feasibility or consequences. However, they are worthy of careful assessment as focusing on what a degree represents in terms of student competencies could be beneficial for credit transfer across institutions as well as for acceptance of credits earned outside of traditional higher education institutions.

Perhaps even more importantly, this framework begins the process of re-orienting national thinking about what higher education is about: it’s not simply about “time in the seat,” it’s about what students know and can do at the end. It is possible that nothing short of that – a fundamental transformation of our understanding and day-to-day business of higher education – will be necessary to increase the production of college degrees that continue to garner substantial labor market rewards.

2 Lumina Foundation for Education, Lumina’s Foundation Strategic Plan: Goal 2025 (Indianapolis, IN: Lumina Foundation, 2010).


6 For more information on the National Educational Longitudinal Study (NELS 1988-2000) and associated Postsecondary Education Transcript Study (PETS), see http://nces.ed.gov/surveys/nels88/.


8 I do not differentiate between attending multiple institutions and transferring as it is not clear what are the appropriate criteria for making this distinction (for some recent discussions of this distinction, see McCormick, “Swirling and Double-Dipping”; Adelman, Moving Into Town). Moreover, dividing multi-institutional attendance into transfer or not produces very small cell sizes, particularly for subsequent analyses of time to degree and credits to degree. A definition of permanent transfer available in the NELS dataset is problematic as it is in part defined by the outcome (i.e., whether students completed a degree at the transfer institution).

9 This category includes both community colleges (i.e., public two-year) and private two-year institutions. Private two-year institutions are a small proportion of the total enrollment (less than 3 percent) and approximately 6 percent of the total two-year enrollment in the sample examined. The results do not change substantively if presented analyses focus only on students attending community colleges.

10 If a more restrictive definition of transfer is used, for example, requiring students to complete a certain number of credits at two-year and/or four-year institutions, transfer rates would be higher. Moreover, the sample in this study is focusing on traditional-age students. If all students entering higher education were considered, the transfer rate would be lower.


13 Goldrick-Rab and Pfeffer, “Beyond Access.”


15 The results are similar across the two groups because students who interrupt enrollment are much less likely to complete their degrees. Among those who finish, interrupted enrollment does not seem to be a major factor in prolonging time to degree.

16 United States Government Accountability Office, Transfer Students (Washington, D.C.: GAO, October 2005); Lipka, “Academic Credit.” This gap is usually referred to as a 10-point difference, which emerges if both numbers are rounded. Moreover, the gap equals 10 credits if only credits earned through enrollment are considered.


20 Melguizo, Kienzl, and Alfonso, “Comparing the Educational Attainment of Community College Transfer Students.”


28 California Postsecondary Education Commission (CPEC), *Student Transfer in California Postsecondary Education* (Sacramento, CA: CPEC, 2005).

29 Moore, Shulock, and Jensen, *Crafting a Student-Centered Transfer Process in California.*

30 The percentages vary slightly (between 18 and 22 percent) across studies, depending on the definitions used.


32 Florida Department of Education, “2+2 in Florida.


34 Florida Department of Education, Table 2. Retention and graduation rates available at http://www.ir.ufl.edu/factbook/degree.htm.

35 Florida Department of Education, “2+2 in Florida.


37 See Roksa, “Building Bridges for Student Success.”
For a recent study which examines the predictors of transfer as well as adeptly summarizes previous research, see Kevin J. Dougherty, and Gregory S. Kienzl, “It’s Not Enough to Get Through the Open Door: Inequalities by Social Background in Transfer from Community Colleges to Four-Year Colleges,” Teachers College Record, 3 (2006).


Available online at http://www.acenet.edu/AM/Template.cfm?Section=CCRS.

Center for Adult and Experiential Learning, Fueling the Race to Postsecondary Success: A 48-Institution Study of Prior Learning Assessment and Adult Student Outcomes (March 2010). Available at: http://www.cael.org/pdf/PLA_Fueling-the-Race.pdf. The study relies mostly on descriptives. The authors examine whether the results vary depending on whether students take remedial courses. Although a step in the right direction, this analysis omits a host of factors that are likely to vary between the two groups.

Available online at http://www.wgu.edu/about_WGU/overview.

GAO, Transfer Students.

Betheny Gross and Dan Goldhaber, “Can Transfer and Articulation Policies Propel Community College Students to a Bachelor’s Degree – and Is This the Only Goal?” Policy Brief (University of Washington Bothell: Center on Reinventing Public Education, May 2009).

Some of these “excess” credits seem to be related to college major; however, all majors in the NELS dataset earn on average more than 120 credits.

Barbara Schneider and David Stevenson, The Ambitious Generation: America’s Teenagers Motivated but Directionless (New Haven, CT: Yale University Press, 1999).

For a recent example, see Richard Arum and Josipa Roksa, Academically Adrift: Limited Learning on College Campuses (Chicago: University of Chicago Press, 2011).


Doug Lederman, “Borrowing from Bologna,” Inside Higher Ed, September 13, 2010, available online at http://www.insidehighered.com/news/2010/09/13/lumina. See also a link to Adelman’s report as well as a draft of Lumina’s degree qualification profile available through the article.
Efforts to Improve Productivity:
Impact of Higher Education Reform in Texas

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Texas is a reform-minded and action-oriented state where change occurs on a very large scale: today, Texas is home to one in every 12 U.S. residents.¹ 1,464,081 postsecondary students were enrolled in the state’s colleges and universities in 2010, 40 percent more than in 2000. A decade ago, anticipating this rapid growth, the State of Texas embarked on a targeted strategy to improve the diversity, quality, and productivity of higher education through the implementation and updating of its Closing the Gaps 2015: The Texas Higher Education Plan (CTG). Within this policy framework, efforts of higher education reformers, coupled with strategic initiatives and investments, have led to significant and more diverse enrollment growth, improved persistence and completion rates, and increased degree production. Between 2000 and 2009, the number of degrees awarded increased 42 percent, and more minority students are enrolled than ever before. These results have been tracked and, some might argue, amplified by a noteworthy statewide higher education accountability system that shines a bright light on results.

These efforts to improve Texas’s system of higher education are both ongoing and subject to regular enhancements. Currently, higher education reform is becoming increasingly focused on the productivity of higher education. In a recent update, the Texas Higher Education Coordinating Board (Coordinating Board) notes that despite positive results over the last ten years, the state “has a long way to go to meet other targets by 2015.”² Updated targets are designed to help drive Texas toward higher levels of overall participation and success, including higher rates of enrollment and degree completion among African American men and Hispanic students. These will also contribute to the nation-wide goals laid out by the Obama administration to increase postsecondary credentials.³ In light of the tough economic times, there has also been considerable attention paid to cost-effectiveness; in September 2009, Texas Governor Rick Perry issued an executive order that called for a comprehensive review of higher
education cost efficiencies and laid out numerous specific recommendations to enhance the productivity of higher education in Texas.\(^4\)

The experience of policy makers and higher education leaders suggests that this progress can be attributed to a combination of three elements: reform-oriented leadership; a robust and flexible state-wide planning framework; and persistence in pursuing a goal-oriented agenda via decision-making processes that engage state, system, and institution leaders. Underlying these factors is Texas’s distinctive political culture of low taxes, light regulation, and openness to new business, which encourages innovation and participation in change.\(^5\) Texas is \textit{THE} reform state where there is a palpable sense of pride and ownership at every level in the state’s reform directions and accomplishments.

\section*{The Driving Force: Ten Years of “Closing the Gaps”}

Since its adoption in 2000, Closing the Gaps has served as the framework underlying the strategic expansion of higher education in Texas over the past decade. The framework has been adjusted and enhanced since 2000, leading the state to continued improvements in access, success, and quality. The persistent effort to reach the plan’s goals and the related, highly transparent reporting framework led to Texas’s very high scores in a recent study of higher education accountability systems.\(^6\)

Closing the Gaps was intended to close gaps in participation within Texas, and also between Texas and other leading states. The plan emphasized four broad areas: participation (adding 630,000 higher education students), success, excellence, and research. Statewide benchmarks and goals for enrollment growth, diversity, and degrees conferred were set in each area, and these goals were then customized for the specific mission of each institution. The
legislative funding formula provided incentives for enrollment growth, tying increases in funding to gains in enrollments. Campuses must also report their progress under rigorous reporting requirements, and these data make progress and results tangible, transparent, and accessible.\(^7\)

The Coordinating Board functions as an agency of Texas government: it proposed the CTG plan, and the legislature adopted it. When approved, it became a joint plan of the legislature and the Coordinating Board; as such, this higher education master plan could lay out official, specific ideas and goals for the state.\(^8\) The Texas plan was flexible enough to evolve in light of new developments, and the overarching goals are periodically adjusted based on changes in population projections and institutional progress in achieving targets. It gained immediate support from education, business, and policy leaders, and it has sustained visibility and support as results have emerged from the first decade of implementation.

*Growth in Enrollment and Improved Outcomes*

Texas serves an increasingly large and diverse number of postsecondary students at 146 public and private institutions of higher education.\(^9\) The complex systems of higher education include: 50 public community college districts, 38 public universities and upper division centers, 4 technical colleges, 9 public health-related institutions, 3 public two-year, lower division colleges, 39 independent four-year colleges and universities, 1 independent medical school and 2 independent junior colleges.

The size and growth of postsecondary education in Texas is extreme. In fall 2010, Texas colleges and universities enrolled 1,464,081 students.\(^10\) Between 2000 and 2009, higher education enrollment increased by nearly 40 percent, adding 401,500 students. In one year (2008-2009), Texas higher education enrollment (including career colleges) increased by nearly
122,000 students – the largest jump in state history. Impressive increases in degrees awarded accompanied these massive increases in enrollment. The number of degrees awarded grew by 42 percent between 2000 and 2009, and the absolute number of degrees awarded (209,600) was quite close to the state’s 2015 goal of awarding 210,000 undergraduate degrees and certificates.\textsuperscript{11} The six-year graduation rate at Texas public universities was 55.9 percent for students who entered in fall 2003. In addition, Texas has achieved a 50 percent increase in allied health and nursing awards; 40 percent increase in doctoral degrees; and the state more than doubled research and development expenditures to $3.3 billion (the 2015 target was reached seven years early).

The growth in enrollment and success has been particularly impressive among minority students. In 2009, 42 percent of the students enrolled in postsecondary institutions in Texas were African American or Hispanic; those two groups make up just over 55 percent of the state’s entire population of 15-34 year olds. In fall 2009, African American students were proportionally the best-represented among major ethnicities, with a 6.5 percent participation rate (above 2010 and 2015 targets). While Hispanic enrollment grew 74 percent from 2000 to 2009; the overall participation rate in 2009 was 4.4 percent. Rates of success (measured in degrees awarded), also increased for these traditionally underrepresented groups by about 85 percent for Hispanics and 54 percent for African-Americans between 2000 to 2009.

In addition, financial support for higher education has not flagged, reflecting both political priorities and the comparative strength of the state’s economy. For the 2010-11 biennium, funding increased by 8.4 percent over the previous biennium. A modest proportion of the $22 billion appropriated ($178 million) was designated for performance/incentive funding to
promote and reward degree completion. This sustained investment, guided by the state master plan, has enabled the state to focus on key priorities over the past decade.

By any metric, Texas’s higher education system has become more productive over this period. More students are attending college, more degrees are being awarded, and the diversity of graduates is increasing. The state was able to achieve this progress because Closing the Gaps has provided a clear, unified, and flexible framework for systematic goal-setting, actions, and investments, and measurement of progress. The Coordinating Board is viewed as asking the right questions, measuring progress effectively, putting pressure on institutions of higher education to think about results, and understanding that the goal line for postsecondary education is a credential.¹²

How has Texas been able to create, implement, sustain, and direct these reforms over the past ten years?

**Impact of Higher Education Reform in Texas**

Discussions with policy makers and higher education leaders in Texas reveal some key areas of consensus regarding the sources of reform ideas, how implementation proceeded, the impact of reforms, and the potential for replication and scalability. Observers generally attribute the track record of success to the persistence of individual leaders and of the state higher education Coordinating Board, but there is more to the story. Texas’s outcomes-focused higher education reform agenda developed against a backdrop of ambitious K-12 reform. Like the K-12 movement in Texas, the push for higher education reform was fueled by concerns about demographic change and economic competitiveness, and has been increasingly focused on data and accountability. The process has been both bottom up and top down: work by the governor’s
office and state legislature was complemented by efforts of business leaders and key higher education agency policy makers. And the work of individual policy makers and higher education leaders had a particularly strong impact at key points in the reform process. Many claim a role in these efforts, as well as concern that more still needs to be done. Thus, despite Texas’s apparent accomplishments, there is not universal agreement that this is a success story yet.

Sources of Texas Higher Education Reform Ideas

Demographic and Economic Imperatives

At the core of higher education reform in Texas was growing awareness of population changes coupled with concerns about economic prosperity. By 2000, demographers were drawing attention to the massive demographic shifts underway in Texas, and gradually people began to pay attention. Of great concern to the business and policy community was the disconnect between demographic trends and the need for the state to become more competitive by improving education. These two phenomena appeared incompatible—“something had to give,” according to Diana Natalicio, president of the University of Texas at El Paso (UTEP).

Higher education leaders (at the University of Texas System and in other systems) were, at the same time, also beginning to become more aware of diversity within the system’s institutions. Policy makers were gathering finer-grained data that helped to build an understanding of the different kinds of institutions and the students that they were serving – and the data served to clarify just how much work there was to be done. In the UT System, for example, the flagship campus in Austin is best known, but the other eight universities under the UT umbrella were actually quite different from UT Austin and from one another. The four
border and south Texas campuses served a largely first-generation, low-income, Hispanic population, and their leaders were more vocal than others in the state in voicing concerns about the impact of demographic trends. Through their advocacy, awareness of these different missions grew: the Coordinating Board took on the Closing the Gaps initiative and, although their metrics have been questioned, there is some consensus that the Board set the right targets and understood the unique issues facing individual campuses.\(^{15}\)

Awareness of demographic growth trends was soon coupled with concerns about postsecondary education success and completion, as leaders came to recognize that the “goal line” for higher education is not enrollment, but a credential. The key question was, “how do we know that once students begin an education that they will be successful, where, and how?” A focus on success was driven by the Coordinating Board, but was also a “ground movement” addressed by some postsecondary leaders began even before CTG was official policy.\(^{16}\)

The initial steps in higher education reform occurred prior to the state’s more recent financial bind. Raymund A. Paredes, Commissioner of Higher Education, observed that Texas was in better economic shape than other states in the early 2000s, and so was able to put ideas on the table that were not feasible in places like California.\(^{17}\) Texas A&M Chancellor Mike McKinney observed that Texas has had both flush and hard times. In his view, a lot of the impetus for higher education reform came from industry, which was concerned about Texas’s supply of skilled workers given demographic trends. For example, in 2001-2002, the Greater Houston Partnership announced that the top economic issue facing Texas was the Hispanic dropout rate. This group came to the Governor’s Business Council with ideas about how to address this problem going forward, given changing demographics and the resistance of the education system to change.\(^{18}\)
**K-12 and Higher Education Accountability**

The past decade of higher education reform in Texas was heavily influenced by Governor George W. Bush’s focus on promoting accountability in K-12 education: outcomes-based accountability was the single driving force in every education policy discussion. While accountability has become part of the vernacular in contemporary education policy, it was not a widely discussed concept at the time that Bush took office as governor.¹⁹

At the institutional level, the link to K-12 reform was an important ingredient in changing the focus of the universities. As UTEP President Diana Natalicio observes, it was Texas’s strong commitment to K-12 accountability that provided a context for the spotlight on higher education accountability spawned by Closing the Gaps. She built on the compatibility between the push for accountability at the K-12 level and the promotion of such ideas in higher education – there wasn’t the kind of discomfort with outcomes-based reform that might have been seen in other states because of the earlier push for K-12 accountability. The local effort of the El Paso Collaborative for Educational Excellence, which pushed to raise aspirations and achievement of K-12 students, laid a foundation for the higher education reforms that came later.

Texas education reformers Sandy Kress and Beth Ann Bryan observed that, simultaneously, some ideas about accountability in higher education preceded the political push for a statewide accountability system. They highlight the influential role played by Charles Miller, then chair of the University of Texas System Board of Regents. Under Miller’s leadership, accountability measures were developed by individual systems before they were required by state policy. Miller, who served as chairman of the education committee of the Governor’s Business Council (GBC), had the authority and responsibility to develop the reform
agenda through contacts in major Texas cities and in discussions about education at the GBC. According to this view, higher education accountability followed on the heels of institutional work to improve outcomes and provided a mechanism to measure what was accomplished in the pursuit of both institutional and state goals. The concrete work on accountability (and on the importance of the pipeline between K-12 and postsecondary education) that the UT System began under Chancellor Mark G. Yudof is also a big part of this story.²⁰

According to Charles Miller, at first, Governor Bush was not interested in higher education, and did not hold it in high regard. He viewed higher education leaders as asking for money and then to be left alone. The Coordinating Board did not, at that time, coordinate with the Governor, nor consult about appointments. Governor Bush’s appointment in 1997 of Pamela Willeford to the Coordinating Board launched a transformation in the board from a regulatory to a more policy-oriented agency. As chair from 1999 to 2003, Willeford spearheaded the work that led to the Closing the Gaps blueprint. Her efforts also led to a changed atmosphere in Texas higher education, to one of openness for reform, which also served to change the relationship between the regulators and higher education institutions.²¹

Miller recalls that a number of events occurred simultaneously. Governor Bush asked Miller to become chairman of the Board of Regents of the University of Texas System. In this role, even as a “freshman” board member, one of his first actions was to start talking about accountability. In 2002, Mark G. Yudof was appointed Chancellor of the UT System; under Yudof’s leadership, an accountability framework was created and he was tasked with figuring out how to implement it. Early on, it was hard to get academics to support the accountability plan, and the business community was, in Miller’s terms, “kind of ho-hum.”
Bush’s successor, Governor Rick Perry, appointed a select committee on higher education and this committee worked on the proposal to develop an outcomes-based accountability system for Texas’s colleges and universities. The accountability measures were subsequently connected to the proposal to deregulate authority to the Board of Regents to set tuition. Prominent political leaders, including the lieutenant governor and comptroller, were beginning to make the case for deregulation with accountability in higher education, providing important political support to the nascent reform movement.

Miller argues that the two elements were always connected: “freedom to operate, with accountability…everyone had to be serious on both.” Chancellor Yudof helped push these ideas through the U.T. System, facilitating academic engagement in the process and leading the first steps toward an accountability system. The Texas legislature deregulated the power to set tuition to the Board of Regents in 2003. That same year, Governor Perry issued an executive order calling on all systems of higher education in Texas, and the Coordinating Board, to establish systems of accountability.  

National Impact

Texas leaders aspired to more than statewide scaling of reform ideas. In addition, they sought national leadership on both K-12 and higher education reform. While there was no intention to create a “No Child Left Behind” policy for higher education, gradually, Texas’s leadership on higher education accountability gained national momentum. In 2003, Miller testified for a U.S. House committee (chaired by Congressman John Boehner) on affordability, accountability, access, and quality. And, when Secretary of Education Margaret Spellings established the Commission on the Future of Higher Education in 2005, she chose Miller as the
chair. As a result, after some debate, accountability became a focal point of the Commission’s deliberations and report.\textsuperscript{24}

**Implementation**

The factors that help explain Texas’s success in implementing this ambitious slate of higher education reforms fall into three general categories: a common strategic vision (provided by Closing the Gaps), engaged stakeholders, and a robust, data-driven, and outcomes-focused accountability system.

*Common Strategic Vision*

Commissioner Paredes argues that a sense of common purpose has been key to the continued implementation of reforms at the state level. Closing the Gaps has focused on the right issues and sensible goals, even though the state has not made as much progress as it would have liked.

In addition, because the common vision set priorities for the entire state but was flexible enough to reflect distinct campus missions and needs, it helped to mobilize stakeholders across the spectrum of institutions.

*Engaged Stakeholders*

A strong and persistent theme in the story of Texas higher education reform is the clear sense of shared responsibility and pride in the changes among state-level, system, and institutional leaders. The Texas policy environment has supported a freedom to innovate that
seems to have reinforced a deep and widespread sense of ownership in the process and results of reform.

For instance, Sandy Kress and Beth Ann Bryan note the importance of actively engaged college and university presidents who became supportive of legislative involvement in higher education policy. Equally important, in their view, was the Governor’s Business Council, which had a strong interest in accountability. Charles Miller’s ability to “shake things up,” was significant, particularly at the beginning of the movement. These civic and business leaders have been able to “keep the fire burning,” although it might not be strong enough to deepen implementation.

From an institutional point of view, a key to implementation was the level of collaboration among institutional leaders and policy makers. University of Texas System Associate Vice Chancellor Martha Ellis served as a community college president during this period. She observed that looking at issues of student success, and accountability typically lead to the divisive question of “who do you blame?” In Texas, however, there were some policy and campus leaders who decided to go beyond worrying about who to blame and, instead, to “take students where they are now and figure out how to assist them to be successful, as defined by the institution.” This also required developing partnerships between those that provide higher education and those at the K-12-level. These institutional and regional collaborations were fueled by systematic thinking about the postsecondary pipeline that began to focus on college readiness, the college-going culture, transfer policies, and, to a lesser extent, a standardized core curriculum and common course numbering. Many local and regional reforms were developed with this pipeline in mind, and some went on to influence statewide reforms. In the case of developmental education, for instance, everyone from presidents to provosts to faculty to student services
leaders began to see the data about gatekeeper and developmental courses, and successful local projects often became part of a statewide agenda.

_A Robust and “True” Accountability System._

Charles Miller recalls that publishing the UT System’s first accountability report in 2003 created attention in the community and nationally. When the System began using the Collegiate Learning Assessment, the accountability report was able to report aggregate data on student learning outcomes, a level of transparency that is rare in higher education. The focus on student outcomes remains a cornerstone of ongoing state policy and goals. As Miller observes, “some of the things the UT System developed are still alive and working."

Commissioner Paredes believes Texas has “the best accountability system” in the country, and that its impact has been sustained by continued investment in collecting timely data and using those data to make further improvements. Texas recently received a $12 million federal grant to link K-12 and postsecondary data, and is replicating a successful model that California has used to link its educational data.

From an institutional point of view, Guy Bailey, who was provost at the University of Texas, San Antonio during much of this period, observed that for him, as the “implementer of the university,” Closing the Gaps worked quite well because it coincided with what the campus wanted to achieve. As provost, his biggest challenge was selling the plans on campus, but changes to the way higher education money was doled out helped to build support for the reforms among campus leaders. While the baseline funding formula was based on enrollments, and the rapid growth of UT San Antonio provided a larger slice of the pie, the new financial incentives to improve student success (with higher reimbursements for students who persisted to
higher levels of study) also motivated institutional change. In particular, the incentive funding for degrees awarded, degrees in critical fields, and degrees to underrepresented students also benefited the campus. These benefits made the accountability plan easier to sell. In Bailey’s view, this direct link of goals and financial rewards is true accountability and is at the heart of what makes Texas’s system work. Once faculty, chairs, and deans understood the incentives in the funding formula, it was easier to sell the goals because there were real dollars behind them.

**Impact of Reforms on Ways of Doing Business**

*Outcomes Focus*

The accountability component of Closing the Gaps helped instill a focus on outcomes across the higher education system. Commissioner Paredes pointed to Texas’s increased focus on student success as the strongest evidence of this impact, a change the Coordinating Board has achieved through its emphasis on accountability data reporting and its emphasis on student outcomes data. In addition, the state has made student advising mandatory, reduced the number of course students are allowed to drop, and has programs to support faculty training designed to promote student success. Moreover, the Coordinating Board is close to implementing common metrics for learning outcomes, going beyond what individual systems and institutions currently use.

From an institutional point of view, the impact on the way colleges and universities do business is clear. As Guy Bailey put it, “showing the connection between funding and actions makes decision-making much easier.”

Martha Ellis emphasizes that an important characteristic of higher education reform in Texas is that much of the impact begins at institutions, and is moved forward by proponents,
often in parallel with official political and policy actions. For example, in 2009, Texas faced huge dual credit issues between community colleges and higher education institutions. In what may have seemed a somewhat informal process, the Chancellor of the UT System led a voluntary effort to bring all stakeholders together; they developed a collective position, speaking with the same voice on common principles for dual credit. As the policy was implemented, all affected parties were engaged in discussion and trouble-shooting. Though the Coordinating Board’s transfer advisory committee has been closed, the associations of community college and public university presidents have joined to advise the legislature on policies to promote and improve transfer.

University of Texas, El Paso provides a noteworthy illustration of the impact of these reforms: over past decade, UTEP has increased the number of undergraduate degrees awarded by nearly 100 percent, while enrollments increased 30 percent. President Natalicio underscores the campus’s focus and hard work in fostering student success, first at the pre-college-level by supporting efforts to promote higher aspirations and academic preparation among El Paso high school students, and then on addressing the obstacles that may affect students who enroll in higher education, whether at UTEP or El Paso Community College. The implementation of accountability reinforced the need for data to strategically plan interventions. Using these data, the institutions have become much more efficient in helping students accelerate progress to degrees through advising, scheduling, and pruning required hours. UTEP has implemented “a whole host of interventions” (including such tactics as financial literacy coaching and special loan programs); the institution studies the impact very closely through data gathering. As a result, they know much more about their students and their issues than was the case ten years ago and the institution is better at helping them succeed. They have achieved dramatic change,
because they can “figure out a whole lot of things by understanding students and regularly studying data.”

This focus on student outcome data has not been without controversy. For Natalicio, the debate over graduation rates has been a major distraction. In her experience, most people have not understood the basis for low graduation rates at UTEP and similar schools that serve at-risk students. During the first half of this decade, she devoted considerable time to responding to critiques about low graduation rates, and then explaining how they are calculated — excluding most nontraditional students who are the majority at UTEP. Yet, here again, Texas has demonstrated its ability to focus on evidence and goals, and reform its practices. Now, the state’s incentive program will not focus on graduation rates but, instead, on the number of degrees awarded. Natalicio considers this a success, achieved through “sheer tenacity and continued effort” because traditional graduation rates are deeply etched in the minds of policy leaders and the public. Her achievement has been getting people to understand that there has to be a better way to understand success of individual students and institutions.

In this, she has demonstrated one of the unique characteristics of Texas higher education reform — it is driven from top level political and policy leadership, but determined institutional leaders have also contributed significantly to fostering new policy directions and adjusting goals when necessary.

_Economic Pressure to Increase Efficiencies_

In contrast to the economic strength of Texas ten years ago, the state now is facing a budget crisis. For Sandy Kress and Beth Ann Bryan, this may be the most important factor in moving higher education toward more substantive reform. Higher education is vulnerable now,
and they are seeing a sudden increase in interest about how institutions might do things differently – particularly with respect to operating more efficiently (e.g., looking at course selection that leads to a degree, low-enrollment courses). But, these changes would need to be forced through budget pressures, not a reformist motivation to operate “right.” There is also the risk that with large economic problems, and redistricting on the table, the status quo may prevail and make for “rough sailing for anything controversial.”

These uncertainties are causing some leaders to be less optimistic about the future than the heritage of Texas higher education reform. Miller believes that there is momentum for operational change among higher education institutions that creates a culture focused on productivity and results, rather than just inputs. But, this kind of change, he observes, is “glacial,” and may not be possible without external pressure.

These pressures are shaping new priorities for postsecondary reform that will also have significant impact on how institutions do business, according to Commissioner Paredes. For example, Texas is in the process of ensuring that there is a common course numbering system across community colleges and universities to promote smoother transfers. With support from the Lumina Foundation, Texas is working on this course alignment initiative, beginning with development of common course metrics and a common template, which will be extended first to the 40 to 50 most popular lower division undergraduate courses, and then will be aligned with upper division courses.

He also cites the Coordinating Board’s continued work to reduce and avoid duplication of programs and redundant administrative structures – a challenge with many entrenched system structures. One potential step would be moving some of the four independent institutions into one or more existing systems. Another issue is managing the need and development of
additional Tier One research universities in Texas: Texas State University-San Marcos wished to be considered for state investments but, the Coordinating Board’s view is that with UT Austin just 35 miles away, it would not be a good use of state resources to create another research university in that region of the state.

Replicable and Scalable Lessons From the Texas Experience

The scaling of reform in Texas was possible because of the clear and widely accepted vision the goals for the system. Higher education leaders could and did use this framework to drive change at the system and campus-level. They had the freedom to innovate and to contribute to these reforms to the statewide conversation, which, in turn, created a sense of shared ownership of the reform process and enthusiasm to do even more. This spirit is exemplified by Texas A&M Chancellor McKinney who believes the practice of transparency can and should be applied more broadly: to syllabi, cost of assigned books, student evaluations, and more: “disclosing information in an understandable format…makes a wonderful story.”

The Texas reform experience may provide significant lessons about how to reform higher education elsewhere. For instance, was Texas successful in its attempts to bring its reform ideas to scale across the state system? And more broadly, are the roots of Texas’s successful reforms replicable elsewhere? Or was this success contingent on the particular constellation of political and cultural conditions that prevailed in Texas during the late 1990s and 2000s?

Scalability in Texas

In terms of scaling reform ideas across institutions within the state system, observers generally agree that Texas was quite successful, largely because policy makers focused on
linking institutional and state goals and engaging stakeholders in setting and adjusting policy.

For instance, Bailey concludes that it is critical to align internal decision making with broad institutional and state goals. For example, his practice now, as president of Texas Tech University, is to allocate funding at his institution as the state does, using the same formula, with allocations based on student credit hours and research funding. If an internal budgeting process is parallel to the state process (assuming it is a good one), it is possible generate a lot of momentum. At the same time, the challenges are always political, because that approach always produces winners and losers.

Martha Ellis, who served as a community college president during this period, observed that a great deal of input was gathered from college presidents and provosts, and that this engagement was critical to success. From the point of view of institutions, institutional involvement in the policymaking process helped to drive Texas’s success in implementation: while there certainly was top-down policy leadership, campus and system leaders also played a key role. The Coordinating Board adopted a very participatory approach, which Ellis believes helps explain why there was a broad range of accountability measures.

Ellis also notes that the reform agenda’s emphasis on “freedom to operate” also gave rise to numerous “pockets of innovation” to improve participation and success, addressing topics from developmental education to degree completion to the growth of doctoral programs. These local efforts have generated many internal innovative ideas and that were eventually shared across campuses. These ideas are now being shared across institutions as part of major initiatives like Achieving the Dream, but they have their roots in the initial accountability work that accompanied Closing the Gaps. Texas has made great progress in aligning the work of community colleges with broader higher education objectives.
In her experience, the key is to move beyond traditional “articulation agreements,” to develop ongoing partnerships and transfer action plans that provide day-to-day, systematic guidance and tactics. Texas’s new web portal, Transfer101.org, exemplifies these collaborative relationships: it was quickly developed collaboratively and, in Ellis’s view, has made a huge difference. She is also seeing what may be a trend (Arizona and Minnesota) in which community college leaders are brought in, as she was to the UT System, to help with policy issues.

*Replicability Beyond Texas?*

In considering whether what was accomplished in Texas is replicable elsewhere, Charles Miller believes that Texas’s culture was a key prerequisite, particularly in contrast with other states that have a history of absorbing large immigrant populations. Texas culture, he believes, is more civil, open to opportunity, and hospitable; all populations have grown and performed, and it has not become an entitlement state. Higher education institutions are connected to their communities, and support for higher education is not just about the institutions but about a broad culture of commitment to education. This commitment, together with the openness to opportunity is, in his view, a unique prerequisite to replicate Texas’s approach to higher education reform.

For Bryan and Kress, 2000 to 2009 were “golden years” in Texas for higher education reform. To replicate that experience requires the “right set of people with the right passion,” high-level leaders who really understand what the goal is. This means a governor who is “blood religion” committed to reform, a supportive legislature, and proponents in the academic world. Without that support, “it doesn’t matter how full of fire the movement is” because others will
“pour water on it.” Moreover, reform is not a one-time event that fixes everything; it is ongoing, and requires constant vigilance. One conclusion they draw is that reformers must keep in mind who will be the leaders to take their place: a succession of leadership is needed, or the work will not move forward.

Commissioner Paredes emphasized the importance of communicating about the reforms to the policy community outside of Texas and has adopted a conscious agenda to influence policy. He has spent more time working at the national level, with elected officials, federal leaders, and education policy leaders than did his predecessors, calling attention to Texas’ higher education initiatives. As a result, Texas now has partnerships with major foundations like Gates and Lumina that are helping Texas exert more leadership nationally.

He observed that the most difficult aspect of reform in all institutions, not just in higher education, is not to determine what to do differently – it is figuring out how to implement the change. The key, for him, is to determine “how hard you can push the structure of higher education to reform without having a huge backlash.” Yet, if reform moves too slowly, the state loses economic competitiveness and students fall through the cracks. These efforts require a persistent, long-term strategy – he predicts that it will take two to three sessions in the Texas legislature, which meets biennially, to achieve changes in formula funding and financial aid allocation policies.

In Diana Natalicio’s view, Texas is now doing a tremendous amount of dissemination of its ideas and successes; she and her colleagues emphasize the need to continue to build awareness locally and nationally, to provoke thinking and a dialogue because a tremendous amount of attitude shaping still needs to occur. UTEP is involved in model projects sponsored by the Lumina Foundation and they have partnered with Texas A&M International to adapt a
database that UTEP used to monitor students. In other words, they are trying to transfer their “technology” to other campuses. Her goal is for the campus to be a beta site, a proof of concept that low-income Hispanic students can achieve like any other students if they are given the opportunity. They are not trying to keep their strategy a secret; rather, they would like to help everyone to ensure that underrepresented populations can be contributors to our future competitiveness.

The Future of Higher Education Reform in Texas

In the big picture, the experiences recounted here illustrate an extraordinary confluence of policy and action. But, there is not universal agreement – even among the reformers themselves – that Texas has been as successful as it could have been. There is, instead, a sense of “unfinished business” and new horizons for reform.

For example, Sandy Kress gives these reforms an “incomplete grade because it is not clear where Texas is headed despite some legislative support for new reforms.” Despite a foundation to do more, there are “plenty of ways” in which Texas falls short: it not clear how committed the University of Texas at Austin is to accountability (and as the flagship in that system, its actions have a lot of influence).

Miller is disappointed that Texas’s accountability system has not yet been used to focus on how institutions teach, or for faculty to figure out how to teach to needed workforce skills. Developing these aspects has been, in his view, very slow. He also believes that to have an effective, full accountability system, a student unit record system is needed, with data covering early childhood education, K-12, college, and workforce data, to measure the real outcomes of education in the workforce. Without it, “we are limited in what we can do on accountability.”
Perhaps more telling is the conclusion that Commissioner Paredes draws: in his view, higher education in Texas has not changed significantly in the past 25 to 30 years. Costs continue to go up, and even though more attention is being paid to higher education, public institutions are doing about the same as they always have done. The top schools have always tended to take their superiority for granted while, for those below the top 100 to 150 in the world, sufficient attention has not been paid to the institutions that serve the vast majority of students. Paredes’ analysis is that because the top schools are among the world elite, we all continue to be complacent about the lack of progress for all institutions.

**Accelerating Closing the Gaps**

In spite of the state’s successes, higher education policy makers have concluded that Texas still has a great deal more to accomplish to meet other 2015 targets. For example, even though the gap in total enrollments is narrowing, Hispanic students are still underrepresented (4.4 percent of Texas’s Hispanic population participated in higher education in 2009). To achieve faster progress in these and other areas, in 2009, the state adopted a second iteration of CTG that calls for “accelerated” pursuit of a subset of goals. The key areas for acceleration include: African American male and Hispanic participation; Hispanic and African American degrees and awards; STEM degrees and awards, and teacher certifications. Like the original plan, this new initiative calls on, a broad network of partners to promote the acceleration, from the Texas Higher Education Coordinating Board, State Legislature, and Texas Education Agency to third-party stakeholders like the business and philanthropic communities.

The accelerated plan highlights a set of specific policy levers to aid in the acceleration, including improving the effectiveness of developmental education, aligning finance policy with
success goals (for example, funding on student course completion rather than on student enrollment), developing comprehensive transfer agreements and learning outcome frameworks, placing more emphasis on community colleges, and using data to instigate change.

According to Paredes, behind the scenes, the Coordinating Board has encountered opposition to more recent, aggressive reform ideas, particularly a performance funding formula that would reward completion, not just attendance. This is an ongoing topic of debate and legislative activity, with efforts to engage university presidents, chancellors, and board members to support this change. Paredes hopes that in the coming legislative session, there will be time to address a policy that would provide funding based on numbers of degrees awarded, as well as degrees in high-need areas and degrees awarded to at-risk students. A similar policy would be applied to community colleges, rewarding graduates, transfers, and certificate recipients.

Moving Beyond Closing the Gaps

Even with these caveats, catching up with Texas may prove difficult. Sandy Kress observed that the “fire is still burning, the flame is still there,” but efforts may move forward in fits and starts.

While continuous improvement on CTG is noteworthy, the recent work of the Coordinating Board and the Governor’s office to plan beyond 2015 is even more significant. In 2009, Governor Rick Perry issued Executive Order RP73, which set in motion an in-depth and broad-based study of systematic opportunities for cost efficiencies in higher education. Motivating this study was the realization that if Texas is to achieve not just parity with peers in the United States, but a position of global leadership, funds in excess of those available from the state legislature would be needed. Thus, institutions will have to become more efficient and
effective, and align their work more closely with state goals and needs. The recommendations are grouped among five “big ideas.” Two continue from CTG: Funding Results – Paying for Performance and Creating Clear Pathways for Successful Student Outcomes. But three go further in terms of funding structures and institutional performance: Meeting Demand with New Approaches to Delivery; Making Capital Financing Make Sense; and Making Productivity and Continuous Improvement a Cultural Change.29

A distinctive characteristic of Texas higher education reform is that some leaders operate ahead of the pack. Texas A&M Chancellor Mike McKinney illustrates well the role of system leaders in pushing the boundaries of higher education reform. Following a 2007 summit on higher education reform convened by Governor Perry, McKinney moved quickly to develop two initiatives that are changing the view of faculty from an accountability point of view. First, the Texas A&M board passed a policy to give up to five-year rolling appointments to non-tenured faculty, making it possible to retain faculty who are good at teaching, without locking them (and the institution) into tenured positions. In his view, this policy actually strengthens the meaning and use of tenure which is conferred on faculty who are what he describes as “triple threats”—strong in teaching, research, and service.

Conclusion

The experience of Texas policy and higher education leaders suggests that the impact of reforms can be attributed to a combination of reform-oriented leadership, a common strategic vision flexible enough to reflect different institutional missions and encourage innovation, and broad engagement of stakeholders in the persistent pursuit of outcomes-driven change. And while Texas’s postsecondary institutions do compete for resources, over the past eight years system
and institutional leaders have sometimes taken the lead and often collaborated to pursue high-priority reform goals that are mutually beneficial. Texas’s open, innovative, and participative culture might be difficult to replicate elsewhere. For policy makers and higher education leaders around the country, the big question is whether and how it would be possible to create the specific combination of conditions that have made Texas’s efforts successful.


5 Barone, “The Great Lone Star Migration.”


7 See the state-wide accountability system at Texas Higher Education Accountability System: http://www.texasaccountability.org/interactive/Accountability/default.cfm

8 President Guy Bailey interview, October 18, 2010.

9 *Texas Higher Education Quick Facts 2010*, available online at http://www.thecb.state.tx.us/Reports/PDF/1096.PDF.

10 Texas Higher Education Data, available online at http://www.txhighereducationdata.org/.


13 Dr. Natalicio mentioned the extensive and influential demographic studies by Stephen Murdoch, who was at Texas A&M then at UT San Antonio’s Texas State Data Center during these years. For archival material, see: http://txsdc.uta.edu/greet.php.

14 President Diana Natalicio, The University of Texas at El Paso, interview November 24, 2010.

15 Natalicio interview.

16 Martha Ellis interview, November 4, 2010.

17 Commissioner Raymund A. Paredes interview, October 7, 2010. Dr. Paredes was at UCLA during this period, assuming his current position in Texas in 2004. Available online at http://www.thecb.state.tx.us/index.cfm?objectid=FBE1507F-C5D0-FC95-369EF7AC883B5F24

18 Chancellor Mike McKinney, interview November 24, 2010.


20 Bryan/Kress interview. For early editions of the UT System accountability reports, see: http://www.utsystem.edu/osm/accountability/homepage.htm.

21 This paragraph from Miller interview.

22 Paragraphs above from Miller interview.


26 Natalicio interview.

27 Ellis was president of Lee College in Baytown from 2002 to 2008, when she joined the UT System.

28 *Accelerated Plan for Closing the Gaps by 2015*.

Can Community Colleges Achieve Ambitious Graduation Goals?

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Introduction
Over the last decade, the completion agenda has swept through the world of higher education policy and practice. Access to and opportunity for enrollment are no longer adequate: not only must colleges give students a chance to enroll, but students should also graduate or complete a degree. It is hard to overstate the extent to which this represents a change. The education reform agendas of the 1990s were not focused on higher education, and affirmative action was probably the most controversial and widely discussed higher education policy issue—a topic that concerned admission to selective colleges. Indeed, until the late 1990s, when the Department of Education began to publish graduation rates for all colleges whose students were eligible to receive federal financial aid, there were no consistent and comparable national college completion data.

College graduation is now the focus of much of the higher education reform discussion. Since 2008, the Obama administration and the major private foundations involved in higher education reform have set very ambitious targets to increase the number of college graduates and the share of the population with a college degree. Furthermore, in another break from the past, community colleges are now at the center of most discussions of higher education reform.

In this paper, I first review the degree attainment goals set by the Obama administration, the Bill and Melinda Gates Foundation, and Lumina Foundation for Education and explain why the goals were set where they are; I also describe and explain the prominent role that community colleges play in this discussion. For the most part, the goals have been set for the sum of associate’s degrees and bachelor’s degrees, based on projections of total degree production and population growth. But the derivation of degree goals for community college degrees (and indeed what would count as a community college “degree”) is less clear.
Next I discuss the extent of the increase in degree production that would be necessary to meet the goals, reviewing what we know about the ability of the most common reforms and strategies to produce those increases. Indeed, the goals are extremely ambitious, and past reform efforts have not resulted in improvements anywhere near the level that will be necessary to meet these goals. Meeting the articulated goals will thus require ambitious and comprehensive reforms involving fundamental changes in the way colleges operate and in incentives for both institutions and students. I conclude with some discussion about what colleges might need to do to significantly increase their degree production.

**Graduation Goals**

Americans have been proud of their system of higher education for several decades now. Lists of the top “world class” institutions have always been dominated by U.S. institutions. Even in an era of trade deficits, higher education has consistently been a strong export industry: foreign students have chosen to enroll in American colleges and universities, not only filling classrooms—often paying full tuition—but also providing a rich source of skilled human resources, as international graduates have often remained in the United States to work. International data indicated that the United States used to lead the world in the share of its population with postsecondary credentials.

However, this enthusiastic confidence in American higher education has weakened over the last ten years. There are many reasons for this shift, but data from the Organization for Economic Cooperation and Development (OECD) showing the distribution of educational attainment have played a fundamental role in the policy discussion and debate. These data indicate that in 2008, 39 percent of the young adult population (25–34 years old) in the United
States had a postsecondary credential (these include bachelor’s and associate’s degrees, or equivalents, and certificates that require at least two years of instruction). That share exceeded 50 percent in some other countries. There are, to be sure, criticisms of meaning and validity of these international comparisons (see Arthur Hauptman’s paper for a discussion of these problems). Nevertheless, the Obama administration and prominent foundations have used the contrast between 39 and 50-plus percent to develop the goal that 60 percent of the young adult population should have a postsecondary degree by 2020. The derivation of that goal is simple—since the leading countries are likely to continue to increase their postsecondary educated population share, then the United States needs to set a goal that substantially exceeds the share of the currently leading country. A 60 percent share for the United States will result in restored U.S. leadership even if the currently leading countries continue to increase their shares.

The National Center for Higher Education Management Systems (NCHEMS) has calculated that in order to meet the 60 percent goal, the U.S. higher education system would have to produce an additional (more than the system is projected to produce based on past trends) 8.2 million individuals with associate’s degrees or higher between the ages of 25 to 34 by 2020.

The Obama administration has adopted the 8 million degrees goal. The Lumina and Gates Foundations have established similar goals. Lumina has called for an additional 23 million graduates between the ages of 25 to 64 with high-quality degrees and credentials by 2025, which would mean an increase of 150,000 graduates a year. The Gates Foundation set a target to double the number of low-income students who earn a postsecondary degree or credential with genuine value in the workplace by age 26. To reach this completion target, the Foundation assumes an increase of approximately 250,000 additional graduates each year.
Forecasts of the supply and demand of college graduates have also been used to support recommendations for increasing the number of college graduates. Projections by the Georgetown Center on Education and Work imply a shortfall in college-educated labor by 2018 of about 3 million people.\textsuperscript{8}

The goals discussed so far have concerned aggregations of postsecondary degrees. But community colleges in particular play an important role in the attainment goals of the administration and the foundations. Analysts have not produced formal forecasts of the contribution of community college degrees to these overall goals. A logical assumption would be to expect the increase in community college degrees to be proportional to their share of the total. In 2009, twice as many bachelor’s degrees as associate’s degrees were conferred (and only about two thirds of the associate’s degrees were conferred by community colleges). This would suggest that the majority of the increase should be expected to come from bachelor’s degrees. However, most organizations setting these goals, especially the Obama administration and the Gates Foundation, have emphasized the role of community colleges to a greater degree than a proportionate forecast would suggest. For example, in conjunction with the goal of 8.2 million postsecondary degrees, the administration has also called for an additional 5 million community college graduates by 2020.\textsuperscript{9} The Gates Foundation programs, designed to help achieve their degree goals, are primarily focused on community colleges.

Whatever the specific derivation of the community college degree goals, they do represent a conviction that community colleges must play a disproportionate role in any significant increase in postsecondary attainment. There are several reasons for this emphasis.
First, the lag in the U.S. share of young adults with postsecondary degrees is almost entirely due to the deficiency in sub-baccalaureate degree completion and attainment. The United States continues to be among the leaders in attainment of bachelor’s degrees.10

Second, there are millions of students in community colleges who do not graduate. In seeking to increase the number of graduates, trying to get students already in college over the finish line seems like an easier goal than trying to increase the number of graduates by recruiting new students. According to data from the National Education Longitudinal Survey (NELS), which tracked students for eight years after their scheduled entry into a community college, about 15 percent of community college entrants left with between 30 and 59 credits and another 8 or 9 percent left with between 20 and 29 credits. Clearly, the finish line of a degree or certificate is much closer for these recipients of “some college” than it is for new enrollees, making them an obvious target in the effort to increase degree completion.

Third, a rapid increase in two-year degrees is more feasible and economically realistic than an equivalent increase in four-year degrees. Moreover, certificate programs could potentially play a major role in making progress on completion goals. As we shall see, goals that allow certificates to count as “completion” may seem more easily attainable, since certificates take less time and have considerably higher graduation rates than associate’s degrees.

Fourth, low-income students, first generation college students, immigrants, and minorities, especially Hispanics, are over-represented in community colleges, and any increase in college attainment will have to involve these groups. Upper middle class and wealthy white people already have high college attainment rates. By emphasizing the improved performance of community colleges, the policy would presumably have a disproportionate effect on traditionally underrepresented groups and therefore have an additional benefit in terms of equity.
The Gates Foundation summed up their emphasis on community colleges in this way: “We are focusing our efforts on helping community colleges improve their completion rates because they are flexible, affordable, and accessible institutions that enroll the largest number of low-income students.”

Community College Growth Implied by Attainment Targets
Are the community college goals set by the foundations and the administration attainable? Despite the emphasis on community colleges, in most cases, specific community college goals are not well defined. Moreover, there are important differences among the goals: some go to 2020 and others to 2025; the Gates goals only include degrees with “genuine labor market value” for individuals up to 26 years old; the administration’s goals refer to 25–34 year olds and Lumina’s to 25–64 year olds. The Obama administration’s goal of five million additional community college degrees is the best defined, although complications still arise concerning the definitions of “additional” and “degrees.” Although I know of no formal statement, in practice, members of the administration have suggested that certificates of one year or more would count toward the five million. The emphasis on one-year-or-more certificates is supported by data that suggest that many of these awards have a good labor market payoff, while there is little payoff to certificates that can be attained in less than one year.

To give an illustration of the size of the increase in attainment implied by the goals, I will take the five million degrees goal and include one-year-or-more certificates. I will define “additional” as the number of completed degrees above the number implied by a projection of degree and certificate trends between 2000 and 2009.
Table 1 displays the number of bachelor’s and associate’s degrees and certificates conferred by Title IV-eligible institutions between July 1, 2008 and June 30, 2009. Community colleges granted about 510,000 associate’s degrees and 147,000 one-year-or-more certificates for a total of 657,000 awards. Data from nine years earlier—June 30, 1999 through July 1, 2000—show a total of 528,000 awards (412,000 associate’s degrees and 120,000 certificates of one year or more). Thus over those nine years, the number of awards grew by about 24 percent or at an annual rate of about 2.5 percent. How much growth would be necessary to generate 5 million additional community college degree holders by 2020? Assuming that “normal” growth continues at an annual rate of 2.5 percent, then that growth would generate 1.6 million new graduates between 2010 and 2020. Therefore, to generate 5 million new graduates, community colleges would need to increase the total number of graduates by 6.6 million over the decade, requiring an annual growth rate of 8.5 percent, or an incremental growth rate of 6 percent (8.5 – 2.5). If the target refers to all institutions, not just public community colleges, then meeting the target would imply a slightly lower incremental growth rate of 5.5 percent.

Calculating the required increases in community college awards for the other goals that do not differentiate between associate and bachelor’s degrees is more difficult. Assuming a somewhat disproportionate role for community college degrees and making reasonable assumptions about the definition of “additional” degrees still yields required incremental growth rates of 5 to 7 percent.
<table>
<thead>
<tr>
<th>2000 Completions</th>
<th>Sector</th>
<th>Bachelor’s Degrees</th>
<th>Associate’s degrees</th>
<th>Certificates</th>
<th>Less-than-1-year certificates*</th>
<th>1-year-or-more certificates*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public, 4-year or above</td>
<td>810,855</td>
<td>36,813</td>
<td>10,084</td>
<td>5,169</td>
<td>4,915</td>
<td></td>
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<tr>
<td>Private not-for-profit, 4-year or above</td>
<td>406,968</td>
<td>30,764</td>
<td>8,356</td>
<td>1,794</td>
<td>6,562</td>
<td></td>
</tr>
<tr>
<td>Private for-profit, 4-year or above</td>
<td>20,062</td>
<td>22,102</td>
<td>4,968</td>
<td>1,784</td>
<td>3,184</td>
<td></td>
</tr>
<tr>
<td>Public, 2-year</td>
<td>411,633</td>
<td>218,725</td>
<td>101,763</td>
<td>116,962</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Private not-for-profit, 2-year</td>
<td>15,580</td>
<td>14,113</td>
<td>7,399</td>
<td>6,714</td>
<td></td>
<td></td>
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<tr>
<td>Private for-profit, 2-year</td>
<td>48,111</td>
<td>71,252</td>
<td>25,936</td>
<td>45,316</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public, less-than 2-year</td>
<td>66,239</td>
<td>37,046</td>
<td>29,193</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Private not-for-profit, less-than 2-year</td>
<td>9</td>
<td>6,111</td>
<td>2,703</td>
<td>3,408</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Private for-profit, less-than 2-year</td>
<td>45</td>
<td>158,417</td>
<td>91,561</td>
<td>66,856</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total, all institutions</td>
<td>1,237,885</td>
<td>565,057</td>
<td>558,265</td>
<td>275,155</td>
<td>283,110</td>
<td></td>
</tr>
<tr>
<td>2009 Completions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public, 4-year or above</td>
<td>1,060,898</td>
<td>87,485</td>
<td>27,488</td>
<td>17,185</td>
<td>10,303</td>
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<tr>
<td>Private not-for-profit, 4-year or above</td>
<td>537,700</td>
<td>40,632</td>
<td>9,991</td>
<td>3,802</td>
<td>6,189</td>
<td></td>
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<tr>
<td>Private for-profit, 4-year or above</td>
<td>84,830</td>
<td>86,119</td>
<td>20,893</td>
<td>7,341</td>
<td>13,552</td>
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<tr>
<td>Public, 2-year</td>
<td>509,615</td>
<td>365,637</td>
<td>218,476</td>
<td>147,161</td>
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<td></td>
</tr>
<tr>
<td>Private not-for-profit, 2-year</td>
<td>0</td>
<td>6,383</td>
<td>8,970</td>
<td>2,392</td>
<td>6,578</td>
<td></td>
</tr>
<tr>
<td>Private for-profit, 2-year</td>
<td>1</td>
<td>58,453</td>
<td>144,079</td>
<td>57,712</td>
<td>86,367</td>
<td></td>
</tr>
<tr>
<td>Public, less-than 2-year</td>
<td>35,602</td>
<td>17,325</td>
<td>18,277</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Private not-for-profit, less-than 2-year</td>
<td>13,064</td>
<td>8,796</td>
<td>4,268</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Private for-profit, less-than 2-year</td>
<td>22</td>
<td>180,031</td>
<td>96,611</td>
<td>83,420</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total, all institutions</td>
<td>1,683,429</td>
<td>788,709</td>
<td>805,755</td>
<td>429,640</td>
<td>376,115</td>
<td></td>
</tr>
</tbody>
</table>

* Note that the "Certificates" column is simply the sum of the less-than-1-year certificates and the 1-year-or-more certificates.

Note: Calculated using data from Integrated Postsecondary Education Data System (IPEDS).
Achieving Ambitious Goals

I will consider the following three strategies to increase the total number of graduates: increase overall enrollment, shift enrollment to sectors or degree programs with higher graduation rates, or increase graduation rates (including reducing time to degree).

Increasing Enrollment

Though the discussion about college has shifted from access to success, many students still do not enroll in college. Moreover, low socioeconomic status (SES) remains a major determinant of college enrollment. Data from NELS suggest that about one half of the students who had not enrolled in any college eight years after their scheduled high school graduation come from the lowest SES quartile. Therefore, from the point of view of equity, increased enrollment for lower income students remains an important goal. Nevertheless, increasing enrollment as a strategy to increase attainment has serious limitations, especially for community colleges.

First, as it is, the types of students who have not been enrolled in the past face significant barriers and have the least financial and social capital, meaning that they would likely require the most help and resources to graduate. Although we have not focused on cost in this paper, it is reasonable to conclude that this would be a very costly approach to increasing completions.

Second, given low completion rates (we will discuss these in more detail below), increasing completions by boosting enrollment would require huge increases in enrollment. Roughly speaking, an additional 500,000 graduates from an entering cohort would require an increase in that cohort of 1.5 million community college students; and
all of the entering cohorts would have to be increased. Put another way, in 2009, over 10 million students enrolled in public community colleges at some point during the year. During that year, the colleges awarded 411,000 associate’s degrees and 116,000 one-year-or-greater certificates. The relationship between cross-section enrollments and graduates is complex, especially in community colleges where so many students attend part time or attend sporadically and where many students transfer without completing a degree; nevertheless these data suggest that currently, graduation totals sit atop a broadly based pyramid of enrollments. Moreover, in many states, community colleges already do not have room for additional students, so increasing graduation significantly primarily through expanding enrollment would require inconceivable increases in capacity.

Online education has the potential to expand enrollments, and therefore completions, without significant increases in physical capacity. Online education is already growing rapidly and will be an important component of any strategy to achieve dramatic increases in the number of graduates. But much of the growth in online instruction involves hybrid courses that combine distance and face-to-face instruction. The capacity savings for hybrid instruction is more doubtful. Moreover, research suggests that fully online instruction has lower course completion rates than face-to-face instruction has, especially for the types of low-income students and students with weak academic skills that would have to be enrolled in much greater numbers to meet the various goals.18

To be sure, increasing access to college remains an important policy goal. Working to reduce the continued inequality in access by race and SES is by itself an adequate motivation for continuing to work on the access agenda. But given the large
numbers of students already in college who do not finish a degree, increasing completion rates for those students is a more logical first step. This would require a smaller increase in capacity and a lower increase in total credits conferred since students in this group have already earned credits.

Shifting Enrollments to Sectors with Higher Completion Rates

Some colleges have much higher completion rates than others. The Tennessee Technology Center at McKenzie has a 99.1 percent graduation rate (this is a cohort graduation rate after 150 percent of the time it would take a full-time student to complete), while 135 public two-year institutions report graduation rates less than 10 percent. If all colleges could perform like the Tech Center at McKenzie, then all of the ambitious goals would be more than surpassed. The most striking feature of McKenzie is that it does not grant associate’s degrees. Indeed, of the 50 two-year institutions with the highest graduation rates as reported by the Integrated Postsecondary Data System (IPEDS), only 13 grant any associate’s degrees. In a similar vein, public institutions classified as “less-than-two-year institutions” (the highest degrees conferred by these institutions are certificates taking less than two years) have an average graduation rate of 71.2 percent for 150 percent of normal program completion time. Clearly, shifting enrollments to certificate programs (if that can be done) would increase completions (without considering the value of a certificate). Higher graduation rates in for-profit institutions in the two-year sector may also reflect a high certificate completion rate. While the for-profits had a 61.2 percent graduation rate, the public community colleges had an average rate of 22 percent. But 57 percent of the for-profit institutions listed in
IPEDS in the two-year sector awarded no associate’s degrees, compared to 12 percent for public community colleges.

Are certificates the answer to the completion problem? Recent studies on certificates, or shorter-term credentials awarded by community colleges that are usually more specific to certain careers and technical skills, have shown that they have real economic value over a high school education and can offer students a relatively quick path to employment. Using longitudinal data from Florida, Jacobson and Mokher show that there are sizeable differences in earnings for students with certificates in health care and protective services relative to those in academic concentrations. Bosworth reviewed the empirical literature on the value of certificates and concluded from studies using both national data and state administrative data that certificates in some fields—primarily health care (but also in some vocational fields) and primarily for men—have good economic returns, in some cases rivaling returns to associate’s degrees.20

Thus if certificates in some fields represent solid economic opportunities for some students, they may be underutilized and, given their high completion rates, probably do represent an opportunity to increase overall completion of postsecondary degrees with reasonable labor market payoffs. Moreover, earning a certificate has higher returns than accumulating an equivalent number of credits.21 At the very least, students should be informed about these programs (for-profit institutions have certainly been successful in convincing many students that certificates make sense for them) and educators, policy makers, and researchers should pay more attention to them. Recent reports and activities by major foundations indicate that this is already happening.22
On the other hand, there are disadvantages to relying too heavily on certificates to meet the current ambitious goals. Even if certificate programs have higher completion rates, those rates may reflect the nature of the students now attracted to certificates rather than the characteristics of the programs themselves.\textsuperscript{23} Many students wish to maintain the possibility of continuing their education, and students who earn certificates rarely continue on to complete additional degrees. In many cases, other institutions do not recognize credits earned in certificate programs as counting toward other types of awards, although this is something that might be corrected if certificates are elevated as increasingly important elements of educational attainment. One-year certificates, which even the certificate advocates acknowledge have uncertain economic payoffs, are growing faster than the more-than-one-year certificates. Moreover, it is only in some fields that even the longer-term certificates have good returns. Occupational forecasts have not isolated the potential demand for certificates, so while wage data suggest that the labor market could absorb some additional certificates (assuming that the recession ends), an increase by one million in high return fields seems optimistic.

Finally, while there may be many reasons to promote an increase in certificate attainment, regaining the lead in the OECD statistics is not one of them. The OECD data that have catalyzed much of the drive to increase completion do not recognize certificates of less than two years. Thus, while certificates will count toward the Obama administration’s goal of 5 million additional community college graduates, they will not count toward the overall goal of 8.2 million associate and bachelor’s degrees.
Increasing Graduation Rates

Any realistic strategy to increase significantly the number of community college graduates must involve increasing graduation rates. These rates at community colleges are frequently criticized for being too low. The Department of Education publishes graduation rates for community colleges based on tracking an entering cohort of first-time, full-time students for three years (for an associate’s degree), or 150 percent of the time it would normally take a full-time student to complete the program in which they were enrolled. A crucial issue here though is that these rates only track students through the college in which they first enrolled, therefore counting students who did not complete an associate’s degree but transferred to a four-year college (or even a two-year college) as non-completers. The latest data show a 22 percent graduation rate for when students are tracked for 150 percent of “normal” time. That rate goes up to 28.4 percent when they are tracked for 200 percent of normal time.24 If students who graduate after transferring were included, then the graduation rate would be higher, although if part-time students (who account for a majority of community college students) were included, then the rate would be lower.

A recent release of the 2004/2009 Beginning Postsecondary Students Longitudinal Study (BPS), which tracked first time college students beginning college in the 2003–2004 academic year for six years through the 2008–2009 academic year, shows six-year graduation rates incorporating completions for students who transferred. Among students who started in a two-year college, 34.5 percent completed some kind of degree or certificate within six years—certificate (8.5 percent), associate’s degree (14.4 percent), bachelor’s degree (11.6 percent). Almost 20 percent were still enrolled and 46 percent
were no longer enrolled, never having earned a degree or certificate. These completion rates have been quite stable over the last decade. The college outcomes for students who were in eighth grade in 1988 and were tracked until 2000 for the NELS dataset were the following: certificates (6.5 percent), associate’s degrees (15.4 percent), and bachelor’s degrees (17.5 percent). It may be that the higher bachelor’s degree rate results partly from the effect of eight years versus six years and from differences in the NELS and BPS samples (Table 2); NELS included only traditional-age students while BPS included first time students of any age. These graduation rates are higher than the IPEDS 150 percent rates but nevertheless show that after at least six years, more than 60 percent of community college entrants have not completed any award. Moreover, a comparison of the two BPS datasets does suggest that there has not been any increase in attainment of associate and bachelor’s degrees by community college entrants between the mid-1990s and mid-2000s. While there has been a shift toward bachelor’s degrees, that increase was more than offset by a decline in associate’s degrees and certificates.

Table 2. Outcomes for community college entrants; percentage of entering cohort that achieved certificates, associate and bachelor’s degrees (highest achieved credential) within the specified time

<table>
<thead>
<tr>
<th></th>
<th>Certificate</th>
<th>Associate’s</th>
<th>Bachelor’s</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>BPS 2004/2010*1</td>
<td>6 years</td>
<td>8.5</td>
<td>14.4</td>
<td>34.5</td>
</tr>
<tr>
<td>BPS 1995/2001*2</td>
<td>6 years</td>
<td>11.5</td>
<td>17.3</td>
<td>38.5</td>
</tr>
<tr>
<td>NELS 1988/2000**3</td>
<td>8 years</td>
<td>6.5</td>
<td>15.4</td>
<td>39.4</td>
</tr>
</tbody>
</table>

* First time college students entering a community college in the specified year
**8th Graders in 1988 were followed until 2000. These data percentages refer to all students who started their college in a community college
1Source: Radford, et al. (2010), Table 2.
2Source: Berkner, et al. (2002), Table 7.
An additional problem with graduation rates is that they are closely related to race and SES—Black, Hispanic, and low-income students complete at much lower rates than white middle class students. For example, while 29.5 percent of white community college entrants complete a bachelor’s or associate’s degree, only 16.5 percent of black entrants do. The disparity is only slightly less for Hispanic students.25

Perhaps many of the students who do not complete a degree are not seeking a degree—they are enrolled to learn some specific skills, for example, and leave college when they have learned those skills. This is undoubtedly true for some, but when asked, the large majority of community college students say that they want to complete a degree or certificate. Data from BPS1995/2001 suggested that 73 percent of the first time students starting in community colleges stated that they wanted an associate or bachelor’s degree and an additional 10.8 percent wanted a certificate.26 Moreover, the strong relationship between income and completion also calls into question the argument that the distribution of degrees reflects a distribution of degree and educational goals.

These completion rates define the challenge facing reformers seeking to substantially increase community college graduation rates in order to meet the completion goals. How can these rates be increased?

Research on “What Works” To Raise Persistence and Completion

While there has been a large quantity of research on persistence and retention in college, only a small share is focused on community colleges.27 One reason for optimism is that this general neglect has changed, and there is a growing body of experimental and quasi-experimental research on community college practices and innovations. Some of these
studies do indicate that new policies and practices can improve student outcomes. We will review some of these studies and draw some general conclusions about the potential of these reforms.

Too many students arrive at community colleges academically unprepared for college-level work. Nearly 60 percent of recent high school graduates who enter higher education through community colleges are referred to at least one remedial course and less than half of the students referred to remediation actually finish the remedial sequence to which they are referred. Many reforms are designed to address this state of underpreparedness. The Early Assessment Program in California tests students in high school and provides services to those judged unprepared academically for college at the California State University System (CSU). Participation in the program reduced the average student’s probability of needing remediation at CSU by 6.1 percentage points in English and 4.1 percentage points in mathematics or about 10 percent, since about half of the students entering CSU required remediation. Other programs test students in their senior year in high school and provide intensive services over the summer. Preliminary results from a random assignment evaluation of this project show that the programs had no impact on total credits attempted but reduced the average developmental credits attempted in the first semester from 2.9 to 2.6, or 10 about percent.

Learning communities are a popular strategy to improve outcomes for students needing remediation, but random assignment studies have found no influence of one-semester-long learning communities on longer-term persistence. In the Accelerated Learning Program (ALP) at the Community College of Baltimore County, developmental students are integrated into college-level courses and are also enrolled in a supplemental
course to provide extra support. A quasi-experimental analysis found that among ALP students who place into the highest level of developmental writing, participating in the program is associated with a 13 percentage point difference in English completion.\textsuperscript{32} Washington State’s Integrated Basic Education and Skills Training Program (I-BEST) provided remedial instruction linked to occupational areas and increased the likelihood of certificate attainment by over 7 percentage points and college credit attainment by almost 10 percentage points.\textsuperscript{33}

Counseling, advising, and other types of student support services are also considered important determinants of student outcomes. Most community colleges have very high student-to-counselor ratios—often as high as 1000 to 1.\textsuperscript{34} A random assignment study of an enhanced student services program that significantly reduced the student-to-counselor ratio and provided a modest stipend had no effect on persistence one semester after the program ended.\textsuperscript{35}

Student success courses are in effect a strategy for providing group counseling. These courses vary widely, but they are designed to help students learn how to be successful in college and to provide information and support. Students in Florida community colleges who enrolled in a student success course were 10 percent more likely than other students to earn a degree or transfer to a public university within six years.\textsuperscript{36} A random assignment study of a program that included a mandatory college success course in California for students on probation found that participation almost doubled the percent of the program students who achieved good academic standing during the two semesters of the program.\textsuperscript{37}

Performance-based financial aid programs have been found to increase
persistence and graduation. A program for low-income students in New Orleans increased the number of students who registered for a class by 8 percent and students in the program earned an average of 12.6 credits compared to 9.2 credits for the control group. Another program in Ohio increased the number of credits earned by 14 percent but did not influence persistence. A state-wide merit aid program in West Virginia found that the program increased the overall number of graduates by about 10 percent, and merit aid programs in Georgia and Arkansas also raised the overall college attainment rate by about the same amount.

What do these results tell us about the potential to increase significantly the number of community college graduates? Although weak outcomes for some popular reforms such as learning communities and enhanced student services are disappointing, this research does suggest that in some cases, strengthened practice and incentives can be used to increase some student outcomes. Some innovations in developmental education and student services can increase success in college-level courses, persistence, and even completion. To what extent do positive impacts on intermediate outcomes translate into increased rates of graduation? Some of these outcomes suggest something like a 5 to 10 percent improvement over “business as usual” in some outcomes. If the most successful of these interventions could be extended to all students and maintained through to graduation, then even some of the ambitious completion targets might be attainable. But some of these outcomes are a long way from increasing institutional graduation rates. Many of the most reliable studies are targeted to particular groups—for example, students on probation or low-income parents facing multiple barriers—or are conducted on small samples of students. Positive effects on a relatively small group of students on the
number of credits earned in one or two semesters will not influence completion unless the programs can be sustained and expanded to a much larger share of a college’s students.

If we want to assess the potential for these programs to lead to very large increases in the numbers of graduates, then we need to ask two things. First, can the programs be scaled to a large enough group of students to influence overall graduation rates? And second, will intermediate outcomes, such as completing a developmental or first level college course or one-semester retention, translate into completions?

The evidence on scaling up is discouraging. There are few examples of pilot programs that were institutionalized and “brought to scale.” For example, in the Achieving the Dream Initiative, a program explicitly designed to bring about institution-wide change, relatively simple, low-intensity programs enroll 25 percent or fewer of students eligible for the service. More intensive programs generally enrolled fewer than 10 percent of the eligible students.41

How effectively are intermediate outcomes translated into completions? We do know that attainment of intermediate outcomes is associated with a greater probability of graduation.42 But that does not necessarily mean that a program that induces completion of a given number of credits will also increase completion. Indeed, in some of the rigorous evaluations we have reviewed, such as the studies of learning communities and enhanced counseling, initial achievement during the program semester faded in the long run. This at least suggests that programs must be sustained. One semester programs often show effects during that semester, but non-participants tend to catch up after the program ends. Of the reforms reviewed above, the merit aid program did apply to all students in the state and was sustained throughout the student’s college career; this program did
increase the number of graduates by 10 percent.

Scaling and sustaining programs involves increased costs, costs that cannot be sustained by funding from special programs or by foundation support. So far I have focused on the effect of reforms on outcomes without considering cost and indeed, most evaluations do not conduct analyses of costs. Results presented so far suggest that even without considering the cost, the types of programmatic reforms typically introduced at community colleges do not have large enough effects to achieve the very ambitious goals currently being discussed. Introducing a consideration of costs, when data are available, reinforces that conclusion. For example, one of the most positive results came from the study of IBEST in Washington, but IBEST students are funded at 1.75 times funding for a regular full-time equivalent. The Accelerated Learning Program at the Community College of Baltimore County was also more costly, but the additional cost was offset by the increased course completion rates—so the cost per course completion was equivalent.

Harris and Goldrick-Rab have conducted a cost effectiveness analysis of a wide range of reforms, many of which are being implemented in community colleges, including college access programs, financial aid initiatives, instructional reforms such as increased faculty/student ratios and increased reliance on full-time faculty (rather than adjunts), and programs to enhance student services. In essence, they compared the typical cost-per-degree at two- and four-year institutions to the cost incurred by the relevant reforms of yielding an additional degree. Using this methodology, they found that three practices were more cost effective than the normal operation of community colleges: developmental education, a call center that contacted students who registered
but failed to show up for classes, and a shift from part-time to full-time professors. Other programs that they studied were no more cost effective than the regular operation of the colleges. The call centers had very small effects and were for a narrowly defined group, but were cost effective because they were cheap. The conclusions about the other two practices were only suggestive because of methodological issues with the underlying research. With the possible exception of an increased use in full-time faculty, these results do not suggest that any of the current practices that they studied would be cost effective approaches to significant broad-based increases in graduation rates.

Thus there are now a growing number of good studies, at least on the effects of interventions, at community colleges designed to improve student outcomes and promote graduation. Some have shown positive effects, and can certainly contribute to an overall improvement in student outcomes, but for the most part, the effects are modest and not large enough to generate the magnitude of improvement that policy makers and educators are trying to achieve.

Lessons from More Successful Institutions

Earlier I discussed the range of graduation rates, and it seems reasonable to ask whether we can learn anything from that variation. If colleges with single digit graduation rates could just get up to the average (in the 20s), that would represent a significant increase in total completions. What differentiates the low-graduation-rate colleges from the apparently more successful colleges?

One crucial feature concerns the emphasis on certificates. In general, certificate programs have much higher graduation rates, so institutions dominated by certificate
instruction have higher graduation rates. What about other characteristics? Analysis of the correlates of variation in published community college graduation rates suggest that the following variables are associated with higher graduation rates: smaller size, a low share of minority students, a lower percentage of part-time students (note that the graduation rate was only for students who started as full-time students), and higher instructional expenditure for full-time equivalent students. These results may provide some guidance for colleges—perhaps colleges should avoid getting too large (although the analysis did not take account of the cost side) or encourage their students to attend full time. As far as instructional expenditures are concerned, we are looking for ways to improve outcomes at equal or lower costs, so that conclusion is not very useful in practice. Unfortunately, most of these characteristics are not useable policy or program practices. IPEDS, the source of the data used in the analysis, does not include information on institutional practices that colleges or policy makers might use to increase graduation.

Several studies have used qualitative analysis to identify the characteristics of colleges that have high completion rates (or other measures of student outcomes), although only one studied community colleges. In a comprehensive review of these studies, Jenkins cites the following characteristics identified by at least one study as possible factors: leadership with a strong focus on student success; well-coordinated, proactive student support services; innovation in teaching and methods for improving student success; use of data analysis to monitor student progress and guide program improvements; targeted programs that provide advising and academic support specially designed for at-risk students; emphasis on engaging students, particularly in the first year; committees or work groups that monitor and promote student success efforts;
collaboration across departments, with broadly shared responsibility for ensuring student success; small class sizes, even in freshman introductory courses; and strong institutional culture, particularly a willingness to see changes through, even if results take time to become evident.\textsuperscript{49}

Research by Rosenbaum, Deil-Amen, and Person suggests that the more structured and simplified programs and guidance systems, used particularly by the for-profits, may lead to better educational outcomes for students whose demographic characteristics and educational backgrounds are similar to those who enroll in community colleges.\textsuperscript{50} Bosworth, who has written another paper for this conference, argues that higher completion rates for certificate programs can be explained by their more structured and simplified organization.\textsuperscript{51} More research is needed to measure the potential benefit of this type of organizational simplification, but there is good evidence that community college students are confronted by a complex and confusing set of processes and choices. One-on-one counseling does not seem to be effective in helping students to navigate these complications. Some form of simplification or better structuring of student pathways and choices seems like a logical response.\textsuperscript{52}

This list of characteristics that emerges from an emphasis on organizational change contrasts with the more specific programmatic focus of much of the evaluation research. The organizational change perspective is based on the notion that changing overall performance of an institution requires a broader comprehensive set of reforms, an argument that is consistent with the empirical results that conclude that the effects of individual reforms fade after students return to business as usual. This perspective may help explain the often-discouraging results of evaluations of individual programs. Bryk
and his colleagues also find that institutional reforms in elementary and secondary
schools that have little effect when implemented alone are effective only when combined
with other measures.\textsuperscript{53}

The Achieving the Dream: Community Colleges Count Initiative (ATD) was
expressly designed to bring about broader organizational change; to move beyond
specific individual programmatic innovations. The ATD model called for colleges to
strengthen their practices in five broad areas: leadership commitment; use of data to
prioritize actions; stakeholder engagement; implementation, evaluation, and improvement
of strategies; and establishment of a culture of continuous improvement. An evaluation of
progress in the 26 colleges that joined the initiative in 2004 found that most colleges had
made progress in these areas.\textsuperscript{54}

Achieving the Dream tracked the percentage of entering cohorts that achieved the
following five outcomes: completed remedial or developmental courses and progressed to
credit-bearing courses, enrolled in and completed college-level “gatekeeper” courses
(gatekeeper courses are the first college-level course in relevant areas, usually math and
language arts, and are often required for graduation), completed courses in which they
were enrolled with a grade of C or higher, re-enrolled term-to-term and year-to-year, and
earned a certificate and/or a degree. Comparing pre- and post-implementation cohorts
showed no statistically significant improvement in most of these outcomes. In particular,
there were no statistically significant change in persistence or two-year completion rates,
although the direction of the changes was positive.\textsuperscript{55}

Although there may be some hints of positive outcomes from this analysis, the
outcome data from Achieving the Dream do not, at least so far, provide strong evidence
that the initiative has led to the types of improvements that would be necessary to achieve the ambitious degree goals. The authors of the report suggest several reasons for the weak results. First, three years may not be enough time for ambitious organizational changes to be reflected in outcomes data, especially graduation rates. Second, despite widespread discussion of the need for broad organizational change, a majority of the colleges devoted most energy to more focused interventions that touched only small numbers of students. Third, most colleges did not emphasize instruction or faculty development and involvement with the initiative, especially for part-time faculty.

A recent report by McKinsey and Company assesses the cost and feasibility of a significant increase in the number of graduates per year based on broad organizational reform. The authors conclude that by emulating some of the practices of what they refer to as “highly productive institutions,” the U.S. higher education system could increase efficiency by 23 percent and therefore produce an additional one million graduates a year by 2020 without additional costs per full-time-equivalent student. They do not provide separate estimates for community and four-year colleges.

The McKinsey report identifies five drivers that account for improvements, but the authors argue that two are particularly important for improvements in community colleges—“systematically enabling students to reach graduation” and “reducing unproductive credits.” The former includes “structured pathways to graduation, effective student supports and effective placement and college preparation, as well as preparing students for post-study work.” Measures to reduce unproductive credits “include better developmental education and tutoring, policies for tracking and intervening to support student progress and completion, transfer policies that conserve credits, and innovative
delivery methods.” While these are reasonable suggestions, the report does not provide much detail about the policies and practices, nor does it describe its methodology in enough detail to evaluate the validity of the conclusions. Still, the report does emphasize the great variation in outcomes among colleges. There are certainly insights to be gained from understanding those differences.

In early 2011, the Community College Research Center completed a set of analyses of research on a variety of community college reforms. The series included reports on developmental education assessment and placement, the acceleration of remediation, pedagogy for math developmental education, contextualization of basic skills instruction, on-line learning, student support services, institutional and program structure, and organizational improvement.\textsuperscript{57} While these reports came to conclusions about the specific topics, they all examined the broader organizational restructuring that would be needed to improve the chances that individual reforms would be effective. Broadly, the series concluded that colleges needed to simplify the structures and bureaucracies that students must navigate; they should engage faculty much more intensively in the mission to support student success, including involving faculty actively in student support activities; and they should be encouraged to align course curricula, define common learning outcomes and assessments, and set high standards for those outcomes.

Research on broad organizational change in community colleges is at a very early stage. Frustration with programmatic initiatives has led to efforts to bring about more ambitious reforms, but these organizational features are hard to measure. Cost effectiveness analysis of broad institutional change in education is notoriously difficult.\textsuperscript{58}
These types of reforms have been shown to be effective in other sectors, but research is just beginning to test them in community colleges.

**Conclusion and Discussion**

Our analysis has suggested that the goals set by the administration and by the Gates and Lumina Foundations are very ambitious. In the end, the goals represent a conviction that the country needs more college graduates. What would colleges have to do to reach those goals?

In the midst of the discussions about international competitiveness and the needs of the economy, it is easy to forget the continuing gaps between student achievement and student aspirations and between postsecondary achievement of lower and higher income students and among students of different racial and ethnic groups. Low-income students enter college at lower rates, are more likely to attend less selective colleges (controlling for relevant academic characteristics), and have less success when they do enroll in college. And the gap between their stated aspirations and their achievement is larger than it is for higher income students. These gaps may be among the strongest reasons to set ambitious goals for college completion. Indeed, in their influential book, *The Race Between Education and Technology*, Goldin and Katz argue that technological development is outpacing educational achievement in the United States, and that one of the most important, if not the most important, problem with these trends is that they exacerbate inequality.⁵⁹

The key question is, can community colleges increase degree production well beyond historical attainment rates? In general, the goals suggest that this increase above
recent trends would have to be between 5 and 10 percent a year. Enrollment increases with unchanged graduation rates would require immense increases in capacity. Recently, educators have become enthusiastic about the potentially positive role that certificates can play in efforts to increase the number of higher education awards. Given the relatively high returns to certificates in some areas, the shorter time required to finish, and the higher completion rates, expanding the number of students earning these awards would make sense. Educators, policy makers, and students should pay more attention to them than they have in the past. But the high return certificates are confined to certain fields, and we are not aware of any attempt to assess the demand for certificates. Furthermore, for those who are concerned about international rankings, certificates would not count in the OECD data.

Increased graduation rates will be a substantial part of any increase in community college degree production. Recent evaluations of specific programs designed to improve student outcomes are not particularly encouraging. Some popular strategies have not been shown to be successful. Other interventions have shown positive effects in the 5 to 10 percent range, but in most cases, these are small programs that lead to intermediate outcomes, such as completion of a first level college course or additional credit accumulation. Translating these into similar percentage improvements in degree production would require taking the programs to “scale,” a notoriously difficult process, and sustaining the positive outcomes through the whole college career to graduation. Positive program benefits tend to fall off after the enhanced services end, suggesting at least that those enhanced services need to be sustained.
Innovative programs will clearly need to be part of any ambitious strategy. The field has benefited from the increasing volume of rigorous evaluations of these programs, but they will need to be accompanied by broader and more comprehensive organizational changes. So far, reform initiatives in community colleges based on institutional design and change have not shown strong effects. But discrete program innovations have dominated the community college reform agenda until only the last decade. Furthermore, the availability of institutional and state-level data that have allowed more detailed tracking of student outcomes at the institutional-level has increased significantly in the last decade. These data allow a more detailed analysis of student problems and a better understanding of institutional performance.

Empirical evidence from research on K-12 and from the private sector suggest that coordinated programs that combine components have stronger positive effects on student (and other) outcomes than those same components when done in isolation. Insights from those sectors and growing experience in comprehensive reform in community colleges suggest that a successful strategy will probably require significant progress in several areas.60

College systems need to be simplified to reduce confusion among students and to alleviate the need for complex counseling. Technology must be intelligently exploited to provide information and to track student progress (and lack of progress) in real time. Reformers need to turn their attention, much more than in past initiatives, to pedagogy, instruction, and professional development. Finally, faculty (including part-time faculty) need to be more broadly engaged in reform efforts. Employee engagement has been the
foundation of organizational reform in the private sector, but reform efforts in community colleges have tended to rely on a small number of faculty activists.

There is no question that this set of ambitious goals will be difficult to achieve. Anything that looks like business as usual will certainly not succeed. Evidence suggests that reforms have succeeded in improving student outcomes, but in order to significantly increase degree outcomes, these improvements will have to be sustained and expanded and incorporated into organizations that support students and faculty in comprehensive ways that go beyond the current experience of most colleges.
I would like to thank Sung Woo Cho for help with background research. Madeleine Weiss did the IPEDS calculations. Betsy Yoon and Gladys Perez edited the manuscript.

At the White House Community College Summit held in October 2010, both President Obama and the summit chair, Jill Biden, referred to the OECD data in their arguments for a concerted effort to strengthen community colleges. The President also cited them again in the 2011 State of the Union Address and further emphasized the need to strengthen community colleges.


Patrick J. Kelly, “Closing the College Attainment Gap Between the U.S. and Most Educated Countries, and the Contributions to be Made by the States” (Boulder, CO: National Center for Higher Education Management Systems, 2010).


Comparing the community college and overall goals is further complicated by the inclusion of certificates of at least one year in the five million goal, which would not be included in the overall goal of eight million since the certificates are not counted in the OECD calculations.

Hauptmann, “What Are the Challenges Facing the Nation in Increasing its Higher Education Attainment Rates?”

“Postsecondary Education,” Bill & Melinda Gates Foundation.

Brian Bosworth, “Certificates Count: An Analysis of Sub-baccalaureate Certificates” (Washington, DC: Complete College America and Future Works, 2010).

Recent analyses of certificates have suggested that while one-year-or-more certificates in some fields have good labor market payoffs, less-than-one year certificates have uncertain value; Bosworth, “Certificates Count.”

The projections generally imply compounded growth rates. This is reasonable if the increase in degrees is driven primarily by enrollment increases. However, if the field counts on completion rates to increase degree output, the compounding assumption is more difficult to defend.

Community colleges account for 65 percent of associate’s degrees and 39 percent of one-year-plus certificates. This would seem to make attaining the five million degrees easier, since the baseline number of degrees (in 2009) is higher and therefore requires a lower percent growth to achieve a fixed number (five million). The complication, though, is that total associate and certificates have grown faster (3.5 percent a year) than those awards conferred by community colleges (2.5 percent a year); therefore, if one projects
that current growth rate forward, there would have to be additional total graduates to meet goal of five million additional awards, since the projected number of graduates would be higher if we include all institutions rather than only community colleges.

These calculations are available from the author.


Shanna Smith Jaggars, “Online Learning: Does It Help Low-income and Underprepared Students?” CCRC Working Paper No. 24, Assessment of Evidence Series (New York, NY: Community College Research Center, Teachers College, Columbia University, 2011); In addition to the use of online education, colleges could increase the efficiency of their capacity utilization by using buildings during weekends and at night, which many colleges are already doing.

Indeed, Kelly and Schneider argue that overall completion rates could be increased by encouraging students to shift from colleges with low completion rates to those with higher rates; Andrew P. Kelly and Mark Schneider, “Filling in the Blanks: How Information can affect Choice in Higher Education” (Washington, DC: American Enterprise Institute for Public Policy Research, 2011).

Certificate programs are much more specific than most associate’s degree programs so may attract students with clearer goals than associate programs. Shifting less-directed students to certificate programs may lower certificate program completion rates.


36 Matthew Zeidenberg, Davis Jenkins, and Juan Carlos Calcagno, “Do Student Success Courses Actually Help Community College Students Succeed?” (New York, NY: Community College Research Center, 2007).


42 Prince and Jenkins, “Building Pathways to Success for Low-Skill Adult Students.”

44 Jenkins et al., “A Model for Accelerating Academic Success of Community College Remedial English Students.”


46 The analysis of remediation relied on one study with positive findings but three other studies found no positive effects. The conclusion about the full-time faculty in community colleges was based on one study, and because of data limitations, there were alternative explanations for the results. The author’s primary goal in writing the paper was to promote the use of cost effectiveness analysis and the difficulty they had in carrying out the analysis is itself an argument for paying more attention to these issues.


51 Bosworth, “Certificates Count.”

52 Scott-Clayton, “The Shapeless River.”

53 These authors point out what they consider to be five essential supports for school improvement: school leadership, parent and community ties, professional capacity of the faculty and staff, a student-centered learning climate, and an instructional guidance system. Schools that combined all of these supports experienced significant improvements in student outcomes. Making significant improvements in one or two of these elements has very little effect.

54 Rutschow et. al., “Turning the Tide.”

55 The authors emphasized two important factors: first there is wide variation among outcomes for individual colleges with some making large gains while outcomes for others fell. Second, while these changes (or lack of changes) are suggestive, they cannot necessarily be attributed to the initiative, since other important factors not accounted for in the analysis may also have driven the changes. Rutschow et. al., “Turning the Tide.”


57 For a summary of the series, see Thomas Bailey, Shanna Smith Jaggars, and Davis Jenkins, “Introduction to the CCRC Assessment of the Evidence Series,” (New York, NY: Community College Research Center, 2011).


60 Jenkins, “Redesigning Community Colleges for Completion;” Scott-Clayton, “The Shapeless River.”
Apprenticeships as an Alternative Route to Skills and Credentials

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Concerns about the rising cost of a college education, the growing need for remedial and developmental education among first-time college students, and low persistence and graduation rates among the most at-risk college students has prompted education officials and policy makers alike to look for ways to fix college in order to reduce costs and improve student outcomes. But maybe college isn’t broken.

Perhaps the real problem is that too many students enroll in college not because they want to be there, or because they are enthusiastic about learning, or even because they believe that the college environment provides the right kind of learning experience, but instead because they lack other career preparation alternatives. Students may have heard from parents, high school officials, policy makers, elected officials, and the media that only by going to college can they enjoy a financially secure future. Sometimes even against their better judgment, students decide to give college a try (or even a second or third try) without fully understanding the personal commitment they must make to learning.

Students who are genuinely committed to the hard work of traditional college learning and who have time to take advantage of academic and other support services can be successful, even if they come to college underprepared academically. However, not all students who enroll in college are willing to put forth the effort needed to be successful, and even among those who are, some find that the demands of work and family leave precious little time to devote to their studies. For some students, however, the classroom is never going to provide the optimal learning environment because they learn best by engaging in activities that yield tangible products. Kinesthetic learners definitely learn best by doing, and some college programs provide very little “doing” time relative to the amount of listening or reading time.

Instead of trying to fix college or even fix students, a more effective approach might be to
expand the postsecondary options available to students - and respected by employers, academics, and the public – so that each student can find the right pathway to success based on their personal and professional goals, life circumstances, learning style and academic preparedness. Included among the expanded postsecondary options should be alternatives to traditional classroom education, including high quality, centralized, and well-recognized apprenticeship programs.

What Is an Apprenticeship?

An apprenticeship is a formal, on-the-job training program through which a novice learns a marketable craft, trade or vocation under the guidance of a master practitioner. Most apprenticeships include some degree of theoretical classroom instruction in addition to hands-on practical experience in the workplace. Classroom instruction can take place at the worksite, on a college campus, or through on-line instruction in partnership with public or private sector colleges.

The apprentice is paid a wage for the time he or she spends learning in the workplace, and while some apprenticeship sponsors cover the costs associated with the classroom-based portion of the program, other sponsors require the apprentice to pay tuition out of their wages. Some sponsors pay apprentices for the time spent in class as well as their time on the job, while others pay wages based only on the time spent in the workplace. All of these details are part of the apprenticeship contract, which provides the apprentice with a clear understanding of the requirements of the program as well as the obligations of the sponsor, including wages and tuition support.

In many countries, such as Germany and Switzerland, apprenticeships are a critical part
of the secondary education system, and the majority of students complete an apprenticeship even if they plan to pursue postsecondary education in the future. It is not uncommon for German or Swiss postsecondary institutions to require a student to complete an apprenticeship prior to enrolling in a tertiary education program. In the U.S., apprenticeships are generally considered to be labor programs rather than education programs, so they are not a conventional part of most secondary or postsecondary systems or programs.

What Are the Benefits of Apprenticeship Programs?

Put simply, an apprenticeship program is an efficient and effective way to prepare students for jobs in a variety of fields. While we typically think of apprenticeships as an appropriate way to train students for positions in the skilled trades or crafts, apprenticeships are utilized in other countries to train engineers, nurses, teachers, finance workers, and myriad other professionals. Apprenticeships may be a particularly effective way for kinesthetic learners to excel, and to provide pathways to success for those who may not have been successful in a traditional classroom environment. Students may find that master practitioners are a more credible source of information and training than are academics who may not have direct experience working in the field for which they are preparing students.

Unlike in the traditional college setting, where a student may be forced to complete years of theoretical training before ever having the opportunity to apply that new knowledge to a practical challenge or problem, the apprentice participates in real work from the first day of his or her program. It may be no surprise that many of our most brilliant and productive modern-day innovators - Bill Gates, Steve Jobs, Mark Zuckerberg and Evan Williams–were able to find their success without securing a college degree.
Apprenticeships also advantage learners by surrounding them with ready-made teachers, role models, and mentors who help the novice develop and then refine their skills, while also introducing them to the culture of the work environment and the mores of the field for which they are training. Apprentices have an opportunity to see firsthand what is required of those who seek career advancement, and they can develop advanced problem solving skills by observing more experienced individuals address challenges. Apprenticeship programs make efficient use of facilities, equipment, and experts that already exist in the work place, and apprentices are likely to learn not just how to use a piece of equipment, but also how to maintain and repair it.

On a practical level, the apprenticeship program provides those students who must earn income while in school with the opportunity to engage in work that supports and reinforces learning rather than distracting from it. Students who attend traditional colleges, but who must also work considerable hours outside of school, often times feel torn between the demands of work and the demands of school, which are generally unrelated. For apprentices, on the other hand, school is work and work is school, so learning and working occupy the same space and time, rather than competing for the student’s attention.

**Are Apprenticeship Opportunities Currently Available in the U.S.?**

Apprenticeship opportunities do exist in the United States, but they are vastly underutilized, decentralized, lack standardization, and are undervalued by students, educators and policy-makers. The first successful federal legislative effort to promote and coordinate apprenticeships was the National Apprenticeship Act of 1937, commonly known as the Fitzgerald Act. This Act treated apprentices not as students but as laborers, and it authorized the Department of Labor to
establish minimum standards to protect the health, safety and general welfare of apprentice workers.

Today the Office of Apprenticeships (OA) exists within the Education and Training Administration (ETA) at the Department of Labor, where it receives an anemic annual appropriation of around $28 million. The OA administers the Registered Apprenticeship program as part of the National Apprenticeship Program, a highly decentralized, state-administered effort to certify apprenticeship sponsors, issue certificates of completion to apprentices, protect the safety and welfare of apprentices, and monitor Equal Opportunity Plans of participating companies to ensure that women and minorities are not the victims of discriminatory practices. The State Apprenticeship Agencies (SAAs) that register programs and apprentices must be recognized by the Department of Labor as an official Registration Agency. Individuals who complete a registered apprenticeship program are awarded a certificate of completion by the registration agency upon the request of their sponsor.

The Department of Labor has been working over the last decade to modernize, improve the quality of, and ensure greater accountability among registered apprenticeship programs. From 2006 through 2008, the Department of Labor worked in partnership with the Apprenticeship Advisory Council and various stakeholders to develop and promulgate new regulations that, among other things, expand the ways in which program completion can be measured. In addition to the traditional, time-based approach that requires an apprentice to complete a minimum of 2000 hours of on-the-job training and didactic instruction, the new regulations introduce a competency-based approach as well as a hybrid model for determining the parameters of successful program completion. The competency-based approach requires the apprentice to successfully demonstrate acquired skills as well as complete related technical
instruction, whereas the hybrid approach requires the apprentice to complete a minimum number of on-the-job learning hours (at least 2000) and related technical instruction hours (generally 144) to demonstrate competency in the defined subject area.

In an effort to improve program quality, the revised regulations introduce new performance standards in addition to those already in place. New to the program is the requirement to track and report program completion rates, which must be at or above the national average for the field (one wonders how every program can be at or above the national average given the algorithm by which averages are calculated). In addition, performance evaluation must include the continued use of quality assurance assessments and Equal Opportunity Compliance Reviews.

Sponsors of registered apprenticeship programs are employers, or groups of employers, often times in partnership with labor unions. Sponsors recruit and hire apprentices, determine the content for training, identify partners for classroom instruction, and develop formal agreements with apprentices regarding the skills to be taught and learned, wages to be paid, and the requirements of classroom instruction. State Apprenticeship Agencies make sure that the program complies with state standards and they also register programs and students. In order to remain registered, apprenticeship programs must support at least one apprentice each year. Programs that yield completion rates below the national average must be provided with technical assistance by the SAA to ensure improved program quality and outcomes.

Unfortunately, it is difficult to find information about the apprenticeship opportunities available in most states, to learn the wage level being paid by an individual sponsor, to understand the long-term outcomes enjoyed by program completers, or even to compare the components and requirements of similar programs offered by two different sponsors or in two
different states. While some states administer the registered apprentice program through their offices of labor, economic development, or workforce improvement, others rely on their WIA OneStop centers to administer the apprenticeship program and disseminate information to individuals seeking work.

**Current Statistics Regarding Registered Apprentices in the U.S.**

In 2007, there were around 28,000 registered apprenticeship sponsors who were training approximately 465,000 apprentices.³ That year, ETA commissioned a survey to learn about what sponsors value, dislike or would like to see changed about the program, and in general, the responses they received were quite positive, including that:

- sponsors would strongly recommend registered apprenticeships to others;
- employers reported a high rate of program completion on the part of the apprentices they sponsored;
- sponsors did not feel that the use of current employees to train new workers was too costly or burdensome;
- sponsors were somewhat concerned about trained apprentices being poached by other employers, but not enough to see this possibility as a deterrent to apprentice sponsorship;
- sponsors were likely to identify their industry as construction, utilities, or retail trade; and
- most sponsors conceded that they were mostly dependent upon current employees to identify new apprentices for their programs.⁴

(See Appendix A for a more comprehensive summary of the survey results)
According to the Department of Labor (DOL), most U.S. apprenticeships are offered in the following fields and industries: construction and building trades; building maintenance; automobile mechanics; steamfitting; machinist, tool and dye; and childcare. While some apprenticeship programs are offered through high schools and correctional facilities, most are offered by individual employers and labor unions.

Since 2003, the Department of Labor has worked with the Department of Health and Human Services to explore the feasibility of expanding the use of registered apprenticeship programs to train workers for healthcare fields. A recent report issued by the Department of Labor indicates that since the beginning of this effort, apprenticeship programs have been developed in 40 healthcare occupations, with the total number of healthcare apprenticeship programs increasing from around 200 to 350 during this time period. DOL is working with several large industry partners to develop apprenticeship programs in clinical care, nursing management and healthcare IT.

One such partnership is with the Evangelical Lutheran Good Samaritan Society (GSS), which has developed apprenticeship pathways that will prepare individuals for clinical positions such as Certified Nursing Assistants (CNA), Licensed Practical Nurses (LPNs), Registered Nurses (RNs), and Nurse Managers. Currently, these apprenticeship programs are used to enable career advancement of current employees, such as individuals who are recruited from the housekeeping and food services department into entry-level CNA programs. In time, these individuals can complete additional requirements, including on-line instruction provided by the University of South Dakota, to become LPNs and RNs. Individuals who enter as LPNs can participate in the program to become RNs and individuals who enter as RNs can use the
apprenticeship program to become long-term care charge nurses, senior housing managers, and home health directors.

The report also describes a new apprenticeship program being developed by the State Employees International Union NW Training Partnership to prepare 40,000 certified Home Care Aids to meet the formal training and certification requirements developed by Washington State. This program is expected to be the largest apprenticeship program in any state, and DOL officials hope that its successful operation will encourage other states to develop similar programs. Increased training opportunities for Home Care Aids are critically important given that the Department of Labor has projected in its 2010-2011 Employment Outlook report that Home Care Aids will be one of the largest growing fields between now and 2018. Washington State serves as just one example of the national effort to raise care standards by requiring healthcare workers to earn appropriate credentials prior to providing unsupervised patient care.

While DOL is encouraged by the development of these models for new apprenticeship programs, they admit that a number of significant challenges must be addressed in order to fully implement these apprenticeship models. In particular, DOL has found that contrary to popular belief, the healthcare industry (outside of nursing and physician training) is unaccustomed to integrating didactic learning with hands-on training, which is a fundamental part of the apprenticeship model. In addition, few people in the industry are aware that the Registered Apprentice program exists, or understand the benefits that are derived from this type of training. At this point, it is unclear how meaningful the certificate of completion will be for individuals who seek to move from the sponsoring employer to another institution or company.

The Department of Labor is also exploring ways to expand the Registered Apprenticeship program in the area of green building and green technology through specialized programs in the
construction, transportation, manufacturing, and the utility industries. The DOL produced, in partnership with various stakeholders, an environmental scan of workforce opportunities and needs in the area of green jobs. The report finds numerous opportunities to utilize the Registered Apprenticeship program to provide specialized training in green technologies and processes, but stakeholders expressed concern about the growing need to provide pre-apprenticeship training in order to increase the number and diversity of qualified applicants to apprenticeship programs. In particular, stakeholders highlighted the need to provide additional pre-apprenticeship training in mathematics, science, writing, computer literacy and customer service to many applications, and in particular to women and to young people from impoverished communities, in order to help them qualify for apprenticeship programs.

Why Expand Formal Apprenticeship Programs in the U.S.?

Given our need to prepare workers for the jobs that will exist in the future, while also improving college completion rates, apprenticeship programs could fill an unfortunate gap in our postsecondary system. Filling this gap will be increasingly important given the inability of institutions of higher education to continue serving high-risk students and those who formerly entered college as Ability to Benefit students (those who have earned neither a high school diploma nor a GED). Though not a replacement for college, apprenticeships are another avenue for career preparation which, if designed well, could also play an important role in preparing students to be successful in the future should they desire to earn a college degree.

Apprenticeship sponsors report very high completion rates, with 44 percent of sponsors reporting apprenticeship completion rates of 90 to 100 percent, 21 percent of sponsors reporting completion rates of between 70 and 89 percent, and 17 percent reporting completion rates in the
range of 50 and 69 percent. Without understanding more about which programs fall into each category, and the number of apprentices each program prepares, it is difficult to determine a national average for completion rates among all apprenticeship programs. However, it is noteworthy that 65 percent of sponsors reported completion rates at or above 70 percent.

It is difficult to understand how completion rates in the Registered Apprentice program compare with those of college-based certificate programs. While the participants in work-based apprenticeship programs may be demographically matched with students in college-based certificate programs, the fact that apprenticeship programs employ a selective admissions model and frequently serve individuals who are already employed by the sponsor apprenticeship programs may be better positioned to select students who demonstrate personal attributes associated with success than are traditional, open-access community colleges.

It is not unreasonable to believe that a sponsor who is paying a wage to an apprentice may have a greater ability than a classroom instructor to capture the apprentice’s attention and motivate his or her commitment to learning. The apprentice may be more inclined to perform well on the job versus in a classroom if he or she wishes to be hired or to remain employed by the sponsor following completion of the apprenticeship program. It is also possible that learning is simply easier and more meaningful when it occurs in the context of a real job, or that the careful alignment between what the student is learning in the classroom with what they are doing on the job yields a higher degree of mastery.

On the other hand, it is possible that high completion rates in apprenticeship programs are the result of minimal rigor and low standards as compared to school-based certificate programs. Without a careful examination of the assessment tools and methodologies employed by apprenticeship sponsors and school-based certificate programs to measure student learning and
skill acquisition, it is impossible to draw conclusion about variations in completion rates, where they exist, between certificate programs and apprenticeship programs.

While some apprenticeships are offered as one-year programs, most apprenticeship programs span a time period of three to six years, requiring 2000 on-the-job hours per year. Completion rates have not been reported based on duration of program, so it is unclear whether the length of the program has an impact on retention and completion rates, although recently the Department of Labor did introduce interim standards so that those who do not complete a program can at least show evidence of certain skill competencies. There has not been a comprehensive effort to track apprentice outcomes beyond completion of the program, so we do not know if those who complete an apprenticeship, earning the title of journeyperson, enjoy improved job security, more rapid advancement or higher earnings than those who enter their profession through some other means, including less formal on-the-job training, high school vocational training, or having earned a college-based certificate.

While the Registered Apprenticeship program appears to provide good education and training options for a wide range of individuals, improvements in the program are needed before taking it to a larger scale. Critical issues to address include the development of mechanisms to improve the rigor, quality, and consistency of these programs; elevate the status of the credential; nationalize elements of the curriculum and assessment systems to ensure better transferability of credentials; develop pathways that will allow registered apprentices to seamlessly apply their credential toward an undergraduate or advanced degree; and perhaps most importantly, improve public perception of apprenticeship programs by refuting the long-standing myths that apprenticeships serve individuals with low abilities who are destined for dead-end jobs.
The U.S. might look to the Swiss model, one of the most successful in the world, to identify ways to improve upon our own apprenticeship program.

**The Swiss Apprenticeship Model**

In other parts of the world, apprenticeships are considered to be a critical component of the national educational program. In Switzerland, for example, almost 70 percent of 16-19 year olds participate in the dual enrollment vocational education and training (VET) programs, which require students to go to school for one to two days per week, with the rest of their time spent in paid on-the-job training programs that last for three to four years. Although the Swiss VET program is primarily a secondary school program, many of the principles upon which it operates could be incorporated into the U.S. postsecondary apprenticeship system.

**Figure 1: The structure of Switzerland’s VET/PET system**

![Diagram of Switzerland's VET/PET system](image)
There are numerous advantages for students enrolled in VET programs, including the ability to earn a wage while learning, to experience a career before making a lifetime commitment, and to learn under the guidance of a master practitioner. Beyond that, VET programs may have added social benefits in that 16-year-olds might better influenced to make good decisions when surrounded by mature mentors and colleagues who serve as positive role models rather than when they are cloistered amongst their chronologically segregated peers.

The Swiss VET model does not ignore the importance of developing core theoretical knowledge in addition to applied vocational knowledge. On the contrary, students are required to enroll in general education and vocational education classes taught in local vocational schools and in industry learning centers, in addition to participating in the on-the-job training programs. Critical to the success of the VET system is the careful collaboration and coordination between the workplace trainers and the school-based educators who work hard to ensure alignment between what the students are learning in school and at work.

Rigorous training and professional development are required of both institutional and workplace instructors. Vocational teachers are required to have a postsecondary credential (known in the Swiss system as a tertiary level A or B degree), at least six months of professional experience, and 1800 hours of preparation in VET pedagogy (300 hours if they teach part time). Teachers of general education subjects at vocational schools are required to have a university degree in their field, but also must complete 1800 hours of preparation in VET pedagogy so they will understand how to make general education relevant to vocational students. Teachers who already have a teacher diploma for general secondary education need 300 ours of preparation in VET specific pedagogy.13
Vocational trainers at host companies must complete 100 hours of training in pedagogy, VET law, and adolescent development. Instructors teaching industry-based courses are required to have 600 hours of pedagogical preparation. In addition, third-party-certified examiners who administer the on-the-job assessments of vocational competencies for students enrolled in dual-track programs also receive training to make sure that their assessments are consistent across companies and cantons.\textsuperscript{14}

This administrative structure places equal value on pedagogical preparation and technical preparation, and fosters partnerships between educators with different experiences and strengths, in order to support the full intellectual development of the student. In fact, unlike in the U.S., the Swiss place a higher value on vocational educators than general educators as vocational educators are seen as having greater expertise and competency since they must have both educational and vocational knowledge and skills. Clearly the Swiss system, unlike the American K-12 education system, does not believe that professional educators are the best people to teach technical skills, nor that technical competencies can be cultivated in teachers through a few hours or even a week spent in professional development workshops.

Firms have a formal role in the development and oversight of VET programs. Their representatives, as well as those of professional organizations and trade unions, play a crucial role in working with representatives of the national government and various cantons to develop the national standards upon which apprenticeship programs are built, as well as the competency exams and assessments that should be utilized to evaluate student outcomes and success.\textsuperscript{15} This nationalized approach to standards and assessment may explain why apprenticeships are held with such high regard by Swiss citizens, employers, and academic institutions.

The roles of each partner in the collaboration are clearly defined:
the national government (through the Federal Office for Professional Education and Technology) ensures quality and strategic planning and development of vocational education programs and ensures their consistent implementation across Switzerland;
• cantonal vocational education agencies implement and supervise the vocational education programs, provide career guidance, and inspect host companies and industry training centers;
• the professional organizations develop course content, qualifications, and exams and provide the apprenticeship opportunities to students.\(^\text{16}\)

Because VET programs are coordinated nationally, the student’s credential is recognized anywhere in Switzerland, regardless of where an individual apprentice may have trained. Small companies that have limited resources to contribute to apprenticeship training often times form coalitions with other small companies to support apprentices that rotate through several companies. The national approach to standards development as well as third-party assessment of students ensures that the apprenticeship experience is focused primarily on common skills and standards rather than company-specific training regimes.\(^\text{17}\)

Some who are critical of apprenticeship learning cite a lack of career mobility as the most significant disadvantage for those who complete these sorts of programs. However, researchers have found quite the opposite to be the case. Recent research sponsored by the Swiss Federal Office of Professional Education and Technology found that while career placement and wages were higher for those who received workplace-based vocational training—as opposed to those (primarily in French-speaking cantons) who completed school-based vocational training programs—students did have the opportunity to transition to new careers, although most who did
so made the decision earlier in their career and did experience initial wage reductions when moving to the new field.\textsuperscript{18}

This reduced wage is not a reflection of the lack of transferable skills, but instead is the result of a premium that Swiss companies pay for those who have on-the-job experience in a given career area. Those who transfer to new companies but continue working in the same field do not experience wage depression and generally enjoy pay increases since employers value the experience such an individual brings to the job.

The Swiss government currently recognizes 250 VET ordinances, which confer the legal basis for each program in Switzerland.\textsuperscript{19} VET programs, which are part of the upper-secondary education system, can last from two to four years, and those who successfully complete these programs are awarded either a VET certificate (for two-year programs) or a VET diploma (for three- or four-year programs).

The Swiss postsecondary education system is divided into two tracks, the Tertiary B track which provides vocational and professional degrees that can be earned in less than three years, and the Tertiary A track, which provides traditional academic degrees that require at least three years of study. Individuals who have completed a VET at the secondary level can enter Swiss professional colleges (Tertiary B institutions) to complete Professional Education and Training (PET) programs, although these are intended to serve individuals who, following completion of the VET, have had several years of work experience. Individuals with work experience also have the opportunity to sit for the Federal Professional Education and Training (FPET) exam and the Advanced Federal PET (AFPET) exam to earn a well-recognized PET or APET diploma. There is no obligation to complete additional school-based education prior to taking the PET or
APET exams; however, almost 94 percent of those interested in taking the exam do enroll in preparatory courses offered by private providers.²⁰

Professional education at the Tertiary A level is provided by universities of applied sciences (UAS) that offer both bachelor’s and master’s degrees in occupational subjects. Those who earn a Federal VET diploma and who pass the Federal Vocational Baccalaureate (FVB) Examination can enroll in a Swiss UAS at the Tertiary A level. Or, with additional preparation, those who hold the FVB and pass the University Aptitude Test may enroll in a Swiss cantonal university, federal institute of technology, or university of teacher education. Those obtaining PET qualifications may also be eligible to attend a UAS.²¹

By contrast, those who do not participate in a VET program and instead attend a secondary school, resulting in the Swiss Academic Baccalaureate, may go directly to a cantonal university, federal institution of technology, or university of teacher education, or after at least one year of professional experience, may enroll in a Swiss UAS.

**Disadvantages of the Swiss System**

Of course, there are disadvantages associated with the Swiss VET program. The primary disadvantage is the cost to industry of providing such highly specialized and individualized training programs, although companies do have the ability to recover their investment through apprentice productivity and longevity during post-apprenticeship employment. Interestingly, while German firms pay less to support an apprentice (the equivalent of approximately $15,000 per apprentice per year) than do Swiss firms (which pay the equivalent of approximately $18,000 per apprentice per year), German firms claim a net loss during the apprenticeship period, while Swiss firms report a net gain as a result of apprentice productivity.²² Swiss firms, as a result of
paying higher wages and having a more flexible labor environment, focus on the productivity model in their apprenticeship programs (in which the apprentice must essentially earn his or her keep in real time) versus German firms, which pay a lower wage but have a heavy union presence, and therefore tend to favor an investment model of sponsorship that assumes a longer-term payoff from the trained individual.

Union presence and power is much greater in Germany than in Switzerland, which might explain why German apprentices tend to be given more menial tasks and less time on the job (thus yielding lower productivity but protecting low-wage union workers from displacement by apprenticeships) than their Swiss peers. Swiss apprentices tend to have higher rates of mobility after completing the apprenticeship program, with 10 percent changing jobs within the first year following the completion of the apprenticeship program.

Since the private sector bears so much of the cost burden of training new apprentices, it is possible that a deep and extended recession could have a significant negative affect on the availability of apprentice placements. The Swiss government and the cantons conduct regular surveys of apprenticeship opportunities and interested students in order to assist in matching students with placement opportunities, and to predict when shortages of apprenticeship slots may require government intervention. When students are not successful in finding apprenticeship placement, the government works with the student to develop a constructive gap year program, and then helps the student locate an apprenticeship in the following year. Students also have the option to enroll in a school-based VET program, but these programs are more prevalent in the French-speaking cantons and the employment outcomes are inferior to dual track VET programs.
As international companies move to Switzerland, they may not embrace the VET program, and may be unwilling to invest resources to prepare trainers, support apprentice wages, and introduce the culture of apprenticeship training to their organization. If this became a widespread problem, it is possible that the government would impose an apprenticeship tax on all companies, and then redistribute those monies to sponsoring companies so that a single company doesn’t invest resources to train individuals who are simply poached by non-participating companies. This proposed system would be analogous to the French model, where companies pay a training tax unless they are actively involved in the direct training of apprenticeships themselves.

Finally, as student demographics shift and the number of young Swiss decline, there will be increased competition between VET programs and institution-based Tertiary B and A programs, and the best students might be enticed away from VET programs. This would change the nature of the VET student population and could have a significant negative impact on the reputation and effectiveness of the entire dual track system. Encouraging individuals from all socioeconomic groups, ability levels, and educational backgrounds to participate in apprenticeship programs is key to maintaining an apprenticeship system that is well-respected and leads to high paying jobs.

**Outcomes of the Swiss VET System**

Apprentices are subjected to regular assessments in the classroom and on the job, culminating in final exams associated with certification. In 2008, the completion rate for Swiss apprentices was 79 percent, while the exam pass rate among program completers was 91 percent. One of the main benefits of the Swiss apprenticeship system is that nearly 70 percent of all students
participate in it, which means that students of all socioeconomic and ability levels are engaged in this form of learning. Such widespread involvement prevents the social stigmatization of apprenticeship programs that limits the effectiveness of apprenticeship programs in the United States. Moreover, since students entering dual track VET programs are frequently high performers, they are academically indistinguishable from the students who elect university education at the gymnasium rather than vocational training or dual education.\textsuperscript{28} The PISA scores of Swiss dual track VET students are generally higher than those of students engaged in apprenticeship programs in other countries, which means that Swiss students are likely to enter the workplace better prepared for work by possessing stronger academic skills.\textsuperscript{29}

**Bridging the Gap Between Labor and Education Programs: Expanding Apprenticeship Opportunities in the United States**

While the Registered Apprenticeship program could be an important component of a comprehensive postsecondary system, there are some barriers to wide-scale implementation.

*Public Opinion*

Perhaps the greatest challenge to wide-scale implementation of high quality apprenticeship programs in the U.S. is public perception that only those with a college education will enjoy satisfying and financially rewarding employment. Public policy officials and education leaders are quick to tell students that a college degree practically guarantees higher lifetime earnings, when, in fact, there is no evidence that such is the case for a given individual.

Much of the rhetoric around lifetime earnings is based on the U.S. Census Bureau’s 2002 report, *The Big Payoff*, which projected future work-life earnings based on wage data collected
during 1998, 1999, and 2000. The results of this study, which suggested that those with a college degree could earn a million dollars more over their work lifetime than those with just a high school diploma, have been misconstrued by many to constitute a guarantee that a college degree will increase an individual’s earnings by a million dollars.

Those who spout the results of this survey generally neglect to disclose what the authors included in the fine print, which is that there is a great deal of variability in earnings even among those who hold a bachelor’s degree. The major the student selected, their personal ambition, the nature of the career path they selected, their work status (full-time versus part-time and continual employment versus intermittent), and their individual effort all have a significant impact on the individual’s wage. In other words, the average earning level of an individual with a bachelor’s degree in business or engineering might be well above that of a similarly educated teacher, social worker, journalist, or dancer if they remain in the field for which they trained. What the report actually shows is that the “big payoff” comes to those who earn a professional degree, such as a medical or law degree.

The report does not take into account net lifetime earnings once the total cost of college and interest payments on student loans are taken into account. More importantly, the report lumps all non-college-educated workers into one category, failing to distinguish between the high earning potential of skilled trades and crafts people versus the low wage-earning potential of unskilled laborers. A more reasoned approach would have been to disaggregate non-college educated workers by occupation and skill level, similar to the way the study authors disaggregated college-educated workers by level of degree attainment.

According to the Department of Labor there are a number of skilled trades learned through apprenticeships that yield a starting wage that exceeds the national average earned by
those with a college degree. It is likely that a journeyman electrician, steamfitter, or plumber will significantly out-earn the average person with a bachelor’s degree. In fact, those skilled trades people who go on to own their own businesses may even out-earn individuals with professional degrees. It is overly simplistic, and in fact inaccurate, to use average wage data to predict future earnings for any individual, but even worse to fail in distinguishing between the earnings of skilled and unskilled workers.

To be successful, a large-scale apprenticeship program in the U.S. should not focus exclusively on low-income students or those who are poor performers in high school, but should instead seek to attract individuals from all socioeconomic levels based on the opportunities, job characteristics, and earning potential associated with skilled trades and crafts. Apprenticeship programs should also be developed for individuals seeking jobs in occupations traditionally associated with a liberal arts education, such as engineering, communications, banking, and teacher professional development. It is short-sighted to assume that only the economically-disadvantaged or low-achieving students can benefit from apprenticeship training when there are plenty of advantaged teenagers and adults who prefer working with their hands to working behind a desk. Active learning opportunities that exist through apprenticeship programs may also enable students with learning and attention disorders to be successful in ways that they could not in a traditional classroom setting. However, without a concerted public awareness and information campaign, teachers and parents are unlikely to be supportive of the apprenticeship pathway given the policy focus on college completion.
Resources and Information

Another significant barrier to increasing apprenticeship enrollments is the lack of information made available to students, parents and high school guidance counselors about the benefits of apprenticeship programs or even how to identify and apply for admission to a high-quality program. The U.S. Department of Education, high schools, libraries, and community centers provide a number of resources to help students select a college, navigate the admissions process, or apply for financial aid.

For example, College Navigator, sponsored by the Department of Education’s National Center for Educational Statistics, helps students identify the right college based on location, program of study, cost, and a number of other variables. Similarly, College.gov is a website made available to middle and high school students to help them plot their course to college. It would be helpful if these resources also provided students with information about career pathways that included apprenticeship training, and about the various apprenticeship opportunities available to them across the country. The Office of Apprenticeship’s (OA) own website provides little information that is of use to parents, students, educators, and potential applicants. Designed mostly to disseminate regulatory information to the recognized state agencies, OA’s website is not a useful tool for students or even employers.

If apprenticeship programs were organized by field rather than by state, national advisory boards could set standards, develop assessments, and participate in third party program evaluation and student testing, thereby blending the role that national advisory groups play in the Swiss system with the peer review system utilized in our higher education accreditation system. It is important to note that some labor unions do provide de facto national standards for certain apprenticeship programs. It is unclear whether certain industries give preference to individuals
trained through a union-supported apprenticeship program as opposed to those who earned school-based certificates or who trained through employer-based apprenticeship programs. States should continue to play an oversight role in inspecting local programs, monitoring apprentice complaints, and assisting programs that have fallen short on quality assessments and reviews.

Incentives

Public policy makers have created a number of incentives to encourage college participation, few of which are extended to individuals enrolled in dual track apprenticeship programs (other than public subsidies made available to community colleges that provide the classroom-based portion of the apprenticeship program).

High schools win awards for placing large numbers of students in AP courses rather than vocational education course, regardless of whether or not students pass the AP exam upon completion of the course. Many companies allow parents to keep adult children on their health insurance policy as long as they are enrolled full-time in school (this may change as a result of healthcare reform legislation), but not if they are full-time apprentices. Companies may not offer health insurance benefits to apprentices until they complete their training and achieve journeyperson status, although full-time college students have the ability to enroll in low-cost college health insurance plans (this, too, may change as a result of healthcare reform). There are also a number of tax advantages associated with saving for college (529 plans), paying college tuition, or paying interest on student loans. Meanwhile, there are no tax advantages to individuals or families whose children are learning as apprentices (although there may be tax advantages for businesses who hire apprentices who are displaced workers or who live in Empowerment Zones).
Even movie tickets are discounted for full-time students, but not for full-time apprentices. While it is true that apprentices do earn a wage, it generally starts low and increases as the apprentices reach pre-defined milestones.

A tremendous incentive for college participation comes in the form of federal grants and loans that allow individuals enrolled in accredited postsecondary program to pay for college tuition, room and board, and to purchase textbooks, sweatshirts, cars, designer coffee, vacations, or whatever else they want to buy. There is no comparable loan program to help full-time apprentices purchase the tools they may need to successfully transition from apprentice to journeyperson. In addition, it is highly likely that a student in a dual track apprenticeship program would not qualify for a federal Pell grant to pay for the instructional portion of their program since students who are full-time wage earners and who attend school part time rarely qualify for these awards.

While the government provides significant financial subsidies to non-profit institutions of higher education to defray the cost of educating students, it does not provide the same level of direct subsidies to companies that are providing similar educational opportunities through apprenticeship programs. In addition, subsidies paid to institutions of higher education mask the true cost of education at public colleges and universities, which may make the cost of supporting an apprentice ($15,000 - $18,000 per year) seem unreasonably high as compared to the sticker price at a public institution of higher education. Meanwhile, with taxpayer subsidies, capital investments, and tax abatements included, the cost of educating a student at a community college or public four-year college, especially in a technical field, is likely to be much greater than the amount paid by a company to support an apprentice.
There are a few states, such as South Carolina, that provide tax incentives to companies that take on apprentices through the Registered Apprentice program, but these sorts of programs have not yet been implemented on a national scale.

Awarding Academic Credit for Workplace Experience

A significant barrier to the integration of the Registered Apprenticeship program into the postsecondary system is the lack of mechanisms for evaluating student achievement and assigning academic credit for the hands-on portion of an apprentice’s training program. Following the model of the Swiss system, the use of outside third-party evaluators to assess student competencies may add credibility to student assessments, and may allow for the development of standards for awarding academic credit for apprentice activities. The U.S. could also elect to adopt the Swiss system of exam-based certificates that individuals can earn to demonstrate their professional competencies as well as their readiness for advanced academic work.

Recommendations for the Future

In summary, it appears that a well-organized, well-publicized, and well-supported national system of dual track apprenticeship programs would fill an important gap, and address a number of growing concerns regarding shortcomings of the current U.S. system of higher education. Dual enrollment apprenticeship programs that actively engage both traditional educators and master practitioners in a coordinated training and education effort have tremendous benefits for all involved. Traditional educators learn from master practitioners about real world applications
of the topics they teach. Master practitioners learn from experienced teachers how best to mentor and teach young workers.

Companies have a formal role in making curricular recommendations and developing assessments that will be used to evaluate student learning and skill development, which in turn also provides a formal mechanism to provide feedback to primary and secondary educators about the strengths and weaknesses of those programs. While there is a cost to companies of providing apprenticeship training, there are benefits associated with preparing workers with the skills they will need now and into the future. Companies also benefit from the ability to observe future employees in workplace prior to making a long-term hiring decision. Firms making a financial contribution to the education of apprentices are far more likely to be engaged in the development of student curricula and assessments and take responsibility for educating our youth, rather than constantly blaming teachers for all that ails American society.

Students benefit from the opportunity to earn a wage while learning a new trade or skill, and they often times benefit from employer subsidies of the classroom instruction associated with their programs. They also appear to enjoy higher graduation and placement rates than their peers who do not participate in apprenticeship programs.

Taxpayers benefit from dual track programs because the cost-burden of educating future workers is shared by the employers who will benefit from having access to a well-trained workforce. In addition, the use of employer facilities and trained personnel reduces the capital investments taxpayers are expected to make to keep classroom facilities at public institutions up to date (which is an almost impossible goal) and to provide adequate professional development to classroom educators.
In order to raise awareness, ensure consistent quality, and enable long-term career mobility among those who are interested in apprenticeship training, the following changes are required:

1. The Office of Apprenticeships should develop a system similar to the higher education accreditation system to provide national oversight of apprenticeship programs based on the field for which apprentices are being trained. These bodies should be involved in the development of curricula, performance standards, and assessment of learning to ensure that apprenticeship experiences do not differ from one employer or one region to another. These bodies can also provide third-party validation of quality, which will improve the value and transportability of the completion credential.

2. The Office of Apprenticeships should improve the dissemination of information about Registered Apprenticeship programs, including the number of opportunities available each year, the requirements of each program, and the wages provided to each participant. Information about the application and selection process should also be publicly available, and students should be able to compare the various programs offered through a portal similar to College Navigator.

3. The Department of Education should be required to include information about the Registered Apprenticeship program on all of its websites and printed materials intended to help students prepare for and select a college.

4. Public policy makers should be careful to include apprenticeship training in any policies they develop or statements they make to encourage participation in postsecondary education.
5. National and regional accrediting bodies should work collaboratively to develop standards by which apprenticeship experiences can be evaluated for academic credit toward a degree in a related area.

6. As in the Swiss system, workplace-based trainers and classroom-based instructors should be required to obtain certifications, based on significant professional development requirements, to address the unique aspects of vocational education. In addition, routine collaboration between classroom and workplace instructors should be required as a condition for participation in the Registered Accreditation program.

7. The Federal government should engage in and support active marketing campaigns to promote the benefits of apprenticeship training, in the same way that they have invested heavily in marketing efforts to increase college access and completion.

8. The Federal government should explore the use of tax incentives to encourage greater participation by private sector firms in the sponsorship of dual track apprenticeship programs, especially in light of the potential savings these programs would impart upon the taxpayer.

There is no doubt that today’s adults need far more education than did adults who completed their compulsory education just two generations ago, but the signs are clear that traditional postsecondary education is not the only, or in some cases the best way to prepare all individuals for the careers they are likely to pursue. The Swiss dual track system, which requires collaboration between credentialed workplace trainers and credentialed classroom instructors seems to be a good model for the U.S. to replicate, perhaps through the Registered Apprenticeship program already in place and administered by the U.S. Department of Labor.
Given the challenges we face in the current system of higher education, I would argue that it is, indeed, time to look back to the future in strengthening and revitalizing the age-old model of apprenticeship training in order to prepare workers for the high skilled jobs many are likely to hold.
Appendix A

Summary of Findings: DOL Survey of Registered Apprenticeship Sponsors

Sponsor Characteristics: The majority (36 percent) of sponsors identified their industry as construction, with 11 percent indicating their organizations were in the utilities and 10 percent identified their industry as retail trade. Approximately 26 percent of the sponsors indicated they were in programs jointly administered by employers and organized labor. Sixty percent of sponsors indicated that their program served only one employer, while 40 percent served multiple employers. Among programs with multiple employers, 38 percent had union involvement. Fifty-three percent of sponsors had small programs, with only 1 to 4 apprentices, while 17 percent had no current apprentices and 30 percent had 5 or more. Forty-eight percent of the sponsors had programs that were over 10 years old, and 31 percent had programs between 6 and 10 years old. About 3 percent of sponsors had programs that were less than one year old.

Program Completion Rates: Sponsors had high completion rates, with 44 percent of sponsors saying that the completion rate for their program was between 90 and 100 percent, and with 65 percent of sponsors reporting completion rates at or above 70 percent. High completion rates were especially common in the aerospace, automotive manufacturing, energy, health services, retail, and transportation industries. Thirty-six percent of sponsors identified personal issues as the reason for non-completion, making this the most frequently cited reason.

Sources for Recruiting: About 60 percent of sponsors identified current employees as an effective source for recruiting new apprentices, with 49 percent of sponsors indicating that educational institutions were an effective source. No more than 20 percent of the sponsors cited the Internet, community-based organizations, private vocational schools, and pre-apprenticeship
programs as effective recruitment sources. Only 14 percent of sponsors indicated that the One-Stop Career Center system and unions were effective recruitment sources.

*Related Instruction:* Fifty-eight percent of the respondents identified community colleges and public technical college as the providers of related instruction. Nearly one in four sponsors said that the related instruction was provided at a sponsor-owned or operated facility and about 17 percent reported that they used proprietary trade schools. Sponsors generally gave high marks to the quality of related classroom instruction. Seventy percent of sponsors said that employers provided the funds for related instruction, while 23 percent indicated that the apprentice covered such costs. High quality of related instruction appeared to be correlated with sponsors recording higher percentages of individuals completing apprenticeship programs.

*Value Sponsors See in Apprenticeships:* Ninety-seven percent of sponsors of registered programs say that they would recommend the program to others, with 86 percent stating they would strongly recommend it and 11 percent indicating they would recommend it with reservations, due primarily to problems with accessing related instruction. The most frequently cited benefit of apprenticeship was that it helped meet their demand for skilled workers.

*Drawbacks:* The most commonly stated drawback was poaching by competitor firms, but while this was cited as a concern, it was not seen as a deterrent. Sponsors generally did not find cost to be a significant problem, and only 7 percent of respondents saw the costs of experienced workers’ time to instruct apprentices as a significant problem, while 34 percent indicated it was a minor problem.


4 *The Benefits and Challenges of Registered Apprenticeships*.


6 *Using Registered Apprenticeship to Build and Fill Healthcare Career Paths*


9 *The Benefits and Challenges of Registered Apprenticeship*.

10 *The Benefits and Challenges of Registered Apprenticeship*.

11 *The Benefits and Challenges of Registered Apprenticeship*.


14 *Learning for Jobs: Switzerland*.

15 *Learning for Jobs: Switzerland*.

16 *Learning for Jobs: Switzerland*.

17 *Learning for Jobs: Switzerland*.


19 *Learning for Jobs: Switzerland*.

20 *Learning for Jobs: Switzerland*.

21 *Learning for Jobs: Switzerland*. 

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The Returns to Occupation-Specific Human Capital.

Learning for Jobs: Switzerland.

Learning for Jobs: Switzerland.


The State of Apprenticeships in 2010.


The Benefits and Challenges of Registered Apprenticeship: The Sponsors’ Perspective (Washington, DC: The Urban Institute, March 2009).
Certificate Pathways to Postsecondary Success and Good Jobs

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February 15, 2011

The collected papers for this conference can be found at www.aei.org/event/100346.
Overview

This paper argues that the United States faces a decline in the education attainment of the labor force that will reduce economic growth and limit national prosperity. We will not be able to halt this decline or reach national postsecondary attainment goals established by the Administration unless significantly higher percentages of working adults and low-income and minority youth complete college credentials with labor market value. Further, and more to the central point of this paper, these two groups are unlikely to reach ambitious attainment objectives without a rapid expansion of non-degree credentials – specifically, sub-baccalaureate certificates awarded for completion of carefully organized, occupationally focused programs of study of at least one academic year in duration.

This is a big challenge to postsecondary education but there is good news here. First, careful review of labor market research indicates that most certificates of one year or more have significant value in the labor market. Second, it seems feasible to quickly ramp up certificate programs; some colleges in some states are showing the way, boosting enrollment in these programs and producing large numbers of quality certificates. Third, there is evidence that completion rates in some of the best, most rigorous certificate programs are significantly higher than in degree offerings. Fourth, there is evidence to suggest that certificate programming can be economically efficient both for students and for state and federal higher education investors. Finally, there are strong indications that low-income and minority youth and working adults can find in certificate programs the success that has been so elusive in degree programs.

This paper considers the evidence and makes recommendations about sub-baccalaureate certificates as a pathway to postsecondary attainment. The first section examines the demographic factors that underlie the importance of boosting attainment of working adults and
low-income and minority youth who are now without postsecondary credentials. Section two summarizes the current status and trends of certificate production, attainment, completion rates, and costs, and the third section reviews findings from research about the labor market value of certificates. Section four considers the advantages of certificate programs in meeting the needs of working adults and low-income and minority youth. This chapter describes the certificate programs of the Tennessee Technology Centers as an example of how certificates can boost the attainment of populations not now served well by traditional degree offerings. The final section concludes with recommendations for action at the federal, state, and institutional level that could increase certificate awards.

This paper is not an argument that low-income and minority youth and working adults should be “tracked” into certificate programs rather than into degree programs where long-term economic and social returns may be greater (for the relatively few who manage to complete them). Good certificate programs are stepping-stones to further degreed education, not a dead-end alternative to it. However, they are also stepping-stones to good jobs.

In the contemporary economy, where some form of postsecondary credential is increasingly the ticket of entry to family-supporting jobs, America’s inverse pyramid of sub-baccalaureate education that produces half as many associate’s degrees as bachelor’s and half as many one-year-or-more certificates as associate’s degrees makes little sense. A national commitment to expand high quality certificate programs of at least one year offers a strategy to reverse the likely decline in labor force educational attainment, meet postsecondary attainment objectives, serve hard-to-serve populations, and strengthen economic growth.
The Importance of Increased Education Attainment in the Labor Force

Over the past several decades, rising educational attainment in a rapidly growing labor force contributed very significantly to productivity, economic growth, and national competitiveness in an increasingly global economy. A Joint Economic Committee report in 2000 found several estimates of the effect of human capital gains on economic growth in the range of 15 percent to 25 percent.¹ That review and other studies also have underscored the indirect contribution of educational advances in fueling innovation and the adoption of new technology. ²

From 1960 to 2000, the labor force more than doubled from about 70 million to about 141 million workers. The number of workers in their prime productive years, ages 25 to 54, increased by over 130 percent in that 40-year period.

This stunning growth in the labor force was accompanied by huge gains in educational attainment. In 1960, just 41 percent of the population over the age of 25 had completed high school but, by 2000, 80.4 percent had at least at high school diploma. College attainment of the labor force grew at an even faster pace. In 1960, only 7.7 percent of adults (age 25 and older) had a bachelor’s degree or higher, but by 2000 this had increased to 24.4 percent. Especially from 1970 to 2000, workers entering their prime working years of 25 to 54 had much higher levels of education than those aging out of the prime age group and those leaving the workforce altogether.

But these advantageous trends have fully played out. Over the years 2000 to 2040, the labor force will not grow at anywhere near the rate of growth of the years 1960-2000. The Bureau of Labor Statistics projects over all labor force growth of only 29 percent between 2000 and 2040 and growth of only 16 percent among prime age workers.
Slow labor force growth is only half the story. From 2000 to 2040, we can expect very little gain in the educational attainment of the workforce, at least as a consequence of young adults moving into and through the labor force. The older cohorts in the current labor force (from age 35 to 54) are now as well educated as the younger cohorts (age 25 to 34), especially in the percentage with at least a high school degree, but also in the percentage with some postsecondary attainment. That means over the next several decades there will be no “automatic” attainment gain as current workers age and older workers leave the labor force. In fact, without some big changes in the pattern of attainment by age, race, and economic status, it is likely that the newer workers coming into the workforce will have lower levels of attainment than the older workers leaving. Workforce attainment levels will stagnate or decline and future economic growth will slow as a consequence.

In the face of these trends, President Obama proposed to the February 2009 joint session of Congress that, “By 2020, America will once again have the highest proportion of college graduates in the world.” Efforts to clarify and quantify that goal led by the National Center for Higher Education Management Systems (NCHEMS) have produced a general consensus that taking international leadership in this way would require U.S. college attainment rates to reach 60 percent in the cohort of young adults ages 25 to 40. In 2008, only 37.8 percent of this age group had degrees at the associate’s level or higher, and at present rates of growth, this would increase to only 41.9 percent by 2020. To close the gap, NCHEMS projects the need to increase degree production 4.2 percent every year between 2008 and 2020.3

The White House has added two complementary goals of adding five million community college graduates between now and 2020, and providing all Americans with a year of credentialed education or training beyond high school.
Meeting these goals will be a huge challenge. Even with the most optimistic assumptions about high school graduation, college continuation, and degree completion, there simply are not enough traditional students to meet ambitious goals within existing patterns of attainment. A realistic appraisal of demographic trends and historic attainment patterns can lead only to a conclusion that increasing workforce attainment – even maintaining current levels of attainment – requires big changes in the postsecondary enrollment and completion of two groups in particular – minority youth and working adults.

Younger age cohorts are more racially and ethnically diverse than adults now in the labor force with greater representation from groups that historically have not been well served in either K-12 or postsecondary education. The proportion of the labor force made up by Hispanic and Black Americans will grow rapidly, reaching 24 percent and 15 percent, respectively, by 2050 while the share made up by whites will shrink to 53 percent.

Unfortunately, Blacks and Hispanics are far less likely that White students to complete high school, attend college, and complete a postsecondary credential. According to NCES data compiled by the College Board, enrollment rates for recent high school graduates for Blacks increased from just 40 percent in 1975 to 56 percent in 2008. The rates for Hispanics increased from 53 percent to 62 percent. But these gains failed to keep pace with gains for Whites, whose direct-from-high-school enrollment rates increased from 49 percent to 70 percent over that same period.4

Beginning Postsecondary Survey (BPS:04/09) data indicate that the college completion gap between Whites and Blacks and Hispanics is not getting any smaller. A study of students beginning their enrollment in 2004 found that 66.9 percent of white students had completed a credential or were still enrolled five years later, while for Hispanics this rate was 57.9 percent
and for Blacks it was 56.6 percent. The six-year BA or AA degree achievement rate for Whites, Hispanics and Blacks was 46.6 percent, 25.3 percent and 24.3 respectively.

There are about 62 million adults (age 25+) in the labor force who do not have postsecondary credentials of any kind. Many have been reading the signals of the labor market and more and more of them have been enrolling in college. The percentage of credential-seeking undergraduates in postsecondary institutions who are age 24 and older increased from only about 27 percent in 1970 to about 40 percent by 2000, even as overall undergraduate enrollment more than doubled over that same period.

Unfortunately, there are very high levels of attrition from college before completion among working adults as compared to traditional students. An analysis of all students of all ages who began their postsecondary education in 2004 revealed that, by 2009, 49.4 percent had completed a credential and an additional 15.0 percent were still working on one. The remaining 35.6 percent were no longer enrolled and had received no credential. However, of those who were between the ages of 24 and 29 when they enrolled, only 34.9 percent had completed any sort of credential, 14.2 percent were still working on one and than half had dropped out without receiving any credential. Students who were above the age of 30 when they enrolled had significantly lower rates of completion.5

This paper argues that both these groups – minority youth and working adults – who have found limited success in traditional degree-focused educational pathways, can find more success in high quality certificate programs. The next two sections elaborate some basic information about certificates and their labor market value.
Sub-Baccalaureate Certificates

The Integrated Postsecondary Education Data System (IPEDS), a system of inter-related surveys gathering information annually from all postsecondary institutions participating in federal student financial aid programs, asks institutions to report sub-baccalaureate certificates by field of study in one of three categories as follows:

- Certificates acknowledging completion of an “organized program of study” at the postsecondary level of less than one academic year; that is, programs that, with full-time enrollment, can be completed in less than one academic year, defined as 30 semester hours, 45 quarter hours, or 900 contact hours;
- Certificates for programs of at least one but less than two academic years – designed for completion in 30 to 60 semester credit hours, 45 to 90 quarter hours, or 900 to 1,800 contact hours;
- Certificates for programs of two to four years – designed for completion in at least 60 but less than 120 credit hours, or in at least 1,800 but less than 3,600 contact hours.

Measuring Annual Certificate Production

There are some limitations with use of the IPEDS data for research into the production of certificate awards. First, there is no state or other secondary level oversight of reporting and institutions sometimes report incorrectly; e.g., reporting awards for non-credit programs when they are asked to report only awards for credit programs or placing programs into the wrong reporting category. Anecdotally, there seems to be more reporting errors in IPEDS certificate data than in degree data.
Second, there is wide variation in the length of certificate programs within the IPEDS categories. Awards for very short programs of three to six semester hours and for longer programs of 25 to 29 semester hours are all reported as “less-than-one-year certificates.” One-to-two-year certificate awards can represent just 30 semester hours but they can represent nearly twice as many credits, even within the same institution. This huge variation in the length of study is unique to certificate programs; credit hours required in degree programs rarely vary more than five to ten percent from institution to institution, across all the states.

Third, many institutions acknowledge that there is much less oversight of certificate programs by state authorities and by regional accrediting bodies than of degree programs. As a result, programs of the same name that purport to be aimed at the same occupational entry can vary dramatically in length and content from one institution to another, even within the same state. This creates obvious difficulties in making comparisons among different programs and different institutions.6

As indicated in Table 1, certificate awards of all lengths reached just over 800,000 in 2009, nearly tripling over 15 years from almost 300,000 in 1994. While much of that increase came in awards for completion of short-term programs, awards for completion of programs of one year or more than doubled. (In this summary, certificates of one to two years and of two to four years are grouped as “more than one year” or as “long-term” certificates.) This is significantly faster than the pace in increase in postsecondary degree production. From 1994 to 2009, associate’s degree awards from all postsecondary sectors grew 53.2 percent, while bachelor’s degrees only increased 38.3 percent over those 15 years.
Table 1: 15 Years of sub-baccalaureate certificate awards (All institutional sectors, 50 states and DC)

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<tr>
<td></td>
<td>Number</td>
<td>Percent</td>
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<tr>
<td>Less Than 1 Year</td>
<td>435,733</td>
<td>53.4</td>
<td>338,465</td>
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<tr>
<td>More Than 1 Year</td>
<td>379,601</td>
<td>46.6</td>
<td>318,896</td>
<td>48.5</td>
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<tr>
<td>Total</td>
<td>815,334</td>
<td>100.0</td>
<td>657,451</td>
<td>100.0</td>
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</tbody>
</table>

Source: Compiled by author from IPEDS

Table 2: 15 Years of sub-baccalaureate certificate awards (Public two-year colleges only, 50 states and DC)

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<tr>
<td></td>
<td>Number</td>
<td>Percent</td>
<td>Number</td>
<td>Percent</td>
</tr>
<tr>
<td>Less Than 1 Year</td>
<td>219,099</td>
<td>59.5</td>
<td>169,765</td>
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<tr>
<td>More Than 1 Year</td>
<td>148,837</td>
<td>40.4</td>
<td>132,032</td>
<td>43.7</td>
</tr>
<tr>
<td>Total</td>
<td>376,936</td>
<td>100.0</td>
<td>301,797</td>
<td>100.0</td>
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</table>

Source: Compiled by author from IPEDS

It appears that this 15-year pace of increase in certificate awards has slowed slightly over the past five or six years, especially in awards for programs of one year or more. The certificate production data shown in Table 2 suggests this slowdown can be attributed in large part to relatively flat growth in production of long-term certificates among public two-year colleges.

From 1994 to 2009, public two-year colleges increased their production of certificate awards for long-term programs by just 33 percent while increasing their production of awards for short-term programs by 169 percent. In 1994, public two-year colleges produced 66.2 percent of all long-term certificates, but by 2009 their share had fallen to only 39.2 percent. Nationally, public two-year colleges have ceded almost all the growth in long-term certificates to for-profit...
institutions. Public two-years have increasingly concentrated their sub-associate awards in short-term programs.

In all institutional sectors, certificate awards are heavily skewed toward healthcare programs. In 2009, 44.1 percent of all certificates were awarded for completion of healthcare related programs; 41.9 percent of the long-term awards were for health care. At the associate’s and bachelor’s degree level, only 11.9 percent of awards were related to healthcare occupations.

The number of certificate awards for programs of at least one year and the increase in such awards is very uneven among the states. On a per population basis, some states produce over twice the national average while other states produce as little as one-third of the national average. Some of the states producing a lot of long-term certificates on a per population basis do not produce significant numbers of associate’s degrees. However, certificate production does not have to come at the expense of associate degree production. Arizona, Florida, Minnesota, Kansas, Iowa, and Wyoming are among the top per capita producers of both long-term certificates and associate’s degrees. If every state produced as many long-term certificates per capita as does Arizona, the annual number of these long-term certificates would more than double to almost 800,000.

A quick comparison of the patterns of certificate production between Arizona (a high certificate producing state) and Connecticut (a low certificate producing state) is helpful in demonstrating the wide variation among states in the relative importance of these postsecondary credentials. In 2009, Arizona (with a population of about 6.6 million) produced about 30,000 certificates for programs of all lengths while Connecticut (with a population of 3.5 million) produced only about 8,000. For every 10,000 of population, Arizona produced 45.5 certificates
while Connecticut produced 23.1 certificates. (These numbers for Arizona do not include the University of Phoenix Online Campus.)

In Connecticut, community colleges (public two-year degree granting institutions) played almost no role in certificate production, awarding just 11 percent of all certificate awards in the state and almost none for programs of more than one year. The major institutional players in the certificate business in Connecticut are the private, for-profit, degree and non-degree granting colleges who awarded 5,555 long-term certificates and 1,297 short-term ones (fully one-half of those were from a single truck driving school). In Arizona, on the other hand, community colleges were major players in certificate programming, awarding 36 percent of them (upwards of 10,600 awards) and more than half of them were for programs of one year or more. The for-profit sector was still very active in Arizona, producing 6,244 long-term certificates and 5,508 short-term awards.

Of course, there are different economies in these states. Connecticut may be slightly less dependent than Arizona on those technical occupational categories that tend to rank high among the primary targets of certificate programming. But, differences in economic structure and performance do not offer a satisfactory explanation of the huge disparity, especially in the public sector, in certificate production between these two states. Informal interviews with community college officials in these two states suggest that institutional culture and state policy frameworks sharply influence the relative interest in certificate level programming. It may be that community/technical colleges in Connecticut have come to place a much higher value on associate’s degrees as the appropriate, more legitimate, threshold of sub-baccalaureate postsecondary education than is the case in Arizona where certificates as well as degrees are seen as having academic validity.
Certificate Completion Rates

It is unfortunately not feasible to compare completion rates across certificate programs and degree programs within institutions. Colleges report their graduation rates to IPEDS by tracking a cohort of beginning students enrolling on a full-time basis without differentiating in that reporting if the students enroll in a certificate program or a degree program. That information is often not available even in state student record systems since many colleges do not maintain records separating the beginning cohort by credential objective.

However, there are a number of non-degree-granting, certificate-only institutions with one and two year programs in several states, and it is feasible to compare their IPEDS-reported completion rates with those of institutions that both award certificates and grant degrees. In 2008, the combined 150 percent of time graduation rate for all 1,010 public two-year degree-granting institutions) in the 50 states was 20.4 percent. That rate is based on and includes the entire cohort of first-time, full-time students from 2005, and those in all certificate and degree programs. In 2008 these institutions produced 526,525 associate’s degrees and 334,002 certificates; 38.6 percent of the certificates were for completion of long-term programs.

In 2008, the combined 150 percent of time graduation rate for all 362 public one- and two-year non-degree granting, certificate-only institutions in the 50 states was 60.6 percent. Of course, this includes students pursing short-term certificates as well as long-term certificates (as it does in the degree-granting institutions). In that year, 54.6 percent of certificate awards from this sector were for completion of programs of at least one year. This indicates a much higher rate of program completion for programs in certificate-only institutions than in degree-granting institutions and suggests a higher rate of completion for certificates than for degrees.
The Cost of Certificate Programs

Again, the only way to compare certificate costs relative to degree costs at a national level is by examining the cost structure of public certificate-only institutions versus public degree-granting institutions. This is useful only with some careful caveats that acknowledge the big differences between these sectors in terms of mission, scale, and instructional content. Many certificate-only institutions have limited general education instruction, at least very little that is discrete compared to general education content embedded within the occupation and technical programs.

On a cost per FTE basis, public certificate-only institutions appear more costly than degree-granting institutions, according to analysis of data available through IPEDS. In 2007-08, the 362 public, non-degree-granting one- and two-year colleges reported total core expenditures of $1.64 billion with total 12-month FTE of 127,840 for an average FTE cost of about $12,800. That year, the 1,010 public degree-granting two-year institutions reported total core expenditures of $41.35 billion with total 12-month FTE of 4,147,350 for an average FTE cost of about $9,970.

In terms of “years of attainment” per FTE basis, however, there is a different story. By this measure, in 2007-08 the degree-granting institutions produced about 0.30 years of attainment per FTE while the certificate-only institutions produced about 0.42 years of attainment per FTE. That is a 40 percent difference. While this is an imperfect indicator of efficiency comparing institutions, not programs, it nonetheless offers hints that, even after accounting for the different program lengths, certificate-oriented programs are probably more economically efficient than associate’s degree-oriented programs.
Estimating Current Certificate Attainment

Counting the annual production of certificates, even with the limitations of IPEDS, is less difficult than trying to estimate the stock of current certificate holders – the number of people in the population who actually have a certificate as their highest level of postsecondary credential. The American Community Survey (ACS) annually surveys a sample of the population to determine education attainment but does not ask if the respondent has attained a certificate. For someone with less than an associate’s degree, any attainment beyond high school can be classified only as either “some college credit, but less than one year of college credit” or “one or more years of college credit, no degree.”

Both of these categories include individuals who may have obtained a postsecondary credential below the degree level – including a certificate award for completion of a short-term program or an award for completion of a long-term program. Obviously, however, both categories also include many more individuals who may have enrolled in college with certificate or degree objectives but dropped out before obtaining any credential.

The Census Bureau calculates that in 2009 there were about 33.8 million individuals age 25 and over some college but no degree.⁸ Taking into account enrollment, persistence, and attainment patterns revealed by NCES studies, and taking into account IPEDS-reported annual production data for the last 25 years, it seems likely that at least two-thirds of these 33.8 million have no postsecondary credential. It might be generously calculated that eight to ten million have a sub-baccalaureate certificate as their highest level of postsecondary attainment. It might be reasonably estimated that about four to six million have a certificate representing completion of an organized program of study of at least one year.
Labor Market Returns to Certificates

National level research on the labor market returns to certificates is quite limited. As noted above, decennial census and annual ACS data do not specifically identify certificate holders. Individuals who might have completed a discrete program of occupational preparation are indistinguishable from those who might have taken only a few scattered general education or technical courses. Although there are widely available estimates for median earnings by level of education that include the attainment category of “some college, no degree” these are of no help in estimating returns to certificates.

Without decennial census or ACS data to compare to wage data for certificate holders, most national level research relies on longitudinal surveys of education and employment carried out by the U. S. Department of Education and supplemented by wage and occupational surveys of the Census Bureau and the Bureau of Labor Statistics. The National Education Longitudinal Studies (NELS) program analyzes the educational, vocational, and personal development of a sample of individuals beginning with their elementary or high school years, and following them over time as they move into the workforce. The NELS program now consists of five studies, three of which are useful for tracking labor market outcomes of postsecondary education: the National Longitudinal Study of the High School Class of 1972 (NLS-72), High School and Beyond (HS&B), and the National Education Longitudinal Study of 1988 (NELS:88).

The big limitation of these longitudinal surveys is that, while they can track certificate awards and earnings for certificate holders relative to degrees or no awards, they do not differentiate among certificates based on the length of the program of study. Thus, certificate awards for programs of just a few credit hours cannot be distinguished from programs of one to two years or more.
On the other hand, research that draws on these surveys is generally consistent in reporting that one year of study after high school results in earnings significantly above of the level of those with no postsecondary participation. Estimates of this earnings advantage to one year of study range from five to ten percent and generally find that earnings and wages rise further with credits completed above one year. This research also indicates that postsecondary participation of less than one year seems to have very little earnings return. Further, research drawing on these national longitudinal surveys generally finds no evidence that certificate attainment, without regard to length of study, consistently results in higher earnings.

Taken together, these findings from national level, survey-based research suggest that certificates for short-term programs of less than one year do not demonstrate significant labor market returns. These findings from national level research suggest that certificates for programs of study of a year or more have strong labor market returns. Some of the research specifically identifies an advantage to completing a long-term certificate versus merely accumulating postsecondary credit but not all findings are conclusive in this regard.9

Research at the state level on returns to certificates is less ambiguous and more consistently finds significant earnings advantage to certificates for programs of one year and more. Most of this state level research rests on matching student records against wage data available through the state-maintained Unemployment Insurance records. This approach has some advantages over NCES surveys. It is not self-reported data as is the case with the national longitudinal surveys. It can examine the returns to education for individual student by comparing earnings before the start of the education program with earnings after completion of the program. It also permits comparisons in wage records between students who have completed
programs of various lengths and wage records of students who started but did not complete these same programs.

It is unfortunate that all states do not routinely make these earnings comparisons or, if they do, choose not to make this information publically accessible. However, enough do to conclude from the research that certificates for programs of at least one year of study almost always offer good labor market returns to recipients and that they provide a platform for career entry and advancement in occupations paying family-supporting wages. Taken as a whole, this state level research suggests that individuals who complete long-term programs of study make significantly more money that those who enroll in these programs but do not complete them. Individuals who complete short-term programs of study do not make significantly more money that those who enroll in these programs but do not complete them. That is generally true across all fields of study.

Field of study is an important predictor of earnings outcomes. In some fields, the average of those who complete long-term certificates make as much money as the average of those who complete associate’s degree programs. That seems to be due to the fact that certificate completers pursue and earn awards in fields with relatively high labor market returns and then they take jobs where they can realize those returns. Many who gain associate’s degrees do not go on to higher attainment, and a significant number of them hold majors in areas that offer limited labor markets prospects for job seekers with less than bachelor’s degree. 10

There is significant and immediate labor demand for increased awards for completion of long-term certificate programs. The Center on Education and the Workforce at Georgetown University forecasts that the U.S. economy will create 47 million job openings over the 10-year period from 2008 to 2018. Nearly two-thirds of these jobs will require at least some
postsecondary education. Further, half of the jobs that must be filled by workers with postsecondary education – 14 million jobs – will be accessible to individuals with a sub-baccalaureate credential; that is, an associate’s degree or long-term certificate. In fact, BLS Occupational Employment Projections suggest jobs that require only an associate’s degree or a postsecondary vocational award (a certificate) will grow slightly faster than occupations requiring a bachelor’s degree or more. This demand represents an opportunity for very rapid growth in the annual production of occupationally oriented associate’s degrees and long-term certificates.

With this foundation of information about certificate programs and their labor market value, the section below returns to the argument that more aggressive certificate programming can offer an important strategy to boost postsecondary attainment.

Certificate Programs as a Pathway to Attainment for Working Adults and Low-Income and Minority Youth

Given the accumulating evidence about demand, earnings, and relative efficiency, it seems both feasible and desirable to ramp up certificate offerings and aim them directly at low-income and minority youth and working adults who are not having much success in traditional pathways to degrees. These two groups are already finding some success in certificate programs and, with a more intentional approach to the design and expansion of long-term certificate awards, they could find still more success.

BPS survey data indicate that older students are much more likely to earn certificates than degrees when they do enroll in either four-year or two-year institutions. Of students who enrolled in 2004 at age 24-29, 19.5 percent received a certificate by 2009 while only 15.4 percent
received a degree. Of those 30 years of age and older, 17.8 percent received a certificate while only 14.4 percent gained a degree.\textsuperscript{12}

In 2007, the Black and Hispanic share of all associate’s degrees was 22.7 versus 63.6 for Whites. The Black and Hispanic share of certificates of one to two years was significantly larger – 32.7 versus 55.2 for Whites.

A study of educational and employment outcomes for low-income students in Florida suggested that certificate programs, in addition to leading generally to good economic outcomes for completers, may have some particular advantages for students from low-income families.\textsuperscript{13}

That study drew from a longitudinal student record system in Florida that integrates data from students’ high school, college, and employment experience. It followed two cohorts of Florida public school students who entered the ninth grade in 1995 and in 1996.

The Florida research suggested that strong earnings effects of degree attainment (associate’s, bachelor’s, and advanced) were largely confined to students who had performed well in high school. They were continuing in postsecondary study a trajectory of success apparent in high school. However, the research found that obtaining a certificate from a two-year college in Florida significantly increased the earnings of students who did not necessarily perform well in high school, relative to those who attended college but did not obtain a credential. These students were finding new success in certificate programs, changing trajectory from their high school years. Moreover, the Florida study confirmed other research that found strong returns to completion of good certificate programs, even relative to associate’s degree completers.

The study also pointed out that the majority of low-income students who did not perform well in high school and went on to two-year colleges took courses in college they were unlikely
to complete or that would not have much effect on their earnings even if they were completed. To be clear, the Florida research found that the overall likelihood of obtaining any postsecondary credential for all students whose high school GPA was a “C” or less was only about 19 percent. Still, there was a much greater chance of completing certificate programs than degree programs.

*The Tennessee Example*

A close examination of a large state system of certificate granting institutions in Tennessee offers some insight into what might make certificate programs a particularly good investment for working adults and recent high school graduates who struggle for success in more traditional community college degree programs.

There are 27 postsecondary institutions in Tennessee offering only certificate-level programs and serving almost exclusively non-traditional students. The Tennessee Technology Centers began as secondary-level, multi-district vocational technical schools in the 1960s under the supervision of the State Board of Education and began to serve adults in the 1970s. In most states, analogous institutions were merged into community/technical college systems but, in Tennessee (as in a few other states), they continue to operate as a discrete set of non degree-granting postsecondary institutions.¹⁴

The Technology Centers award “certificates” for programs of about 500 to 900 clock hours and “diplomas” for programs that exceed one year in length. Diploma programs average about 1400 clock hours and some extend over 2000 clock hours. They are all designed to lead immediately to employment in a specific occupation. In 2008-09, The Centers awarded 2,066 certificates and 4,696 diplomas, serving 12,112 students on an FTE basis. Collectively, the Technology Centers offer about 60 programs, some just at the shorter-term certificate level but
most at the longer-term diploma level. Some of the more popular programs are Practical Nursing, Business Systems Technology, Computer Operations, Electronics Technology, Automotive Service and Repair, CAD Technology, and Industrial Maintenance.

Most students in the Technology Centers are low-income. Nearly 70% come from households with annual income of less than $24,000 per year and 45% report household income of less than $12,000 annually. Thus, most students enrolling in full-time and part-time programs qualify for federal Pell Grants; many receive WIA support for costs of attendance. The Black and Hispanic percentage of Technology Centers students is greater than the percentage of minorities the state population. Average age of the students is 32 years, and all the Technology Centers report a mix of new high school graduates, young adults getting serious about career development, and older adult workers seeking the postsecondary credentials they decided not to pursue when they were younger.

The 2007 IPEDS-reported “150 percent of time” graduation rate for full-time, first time students in the Tennessee Tech Centers community colleges was 70 percent. The 2007 IPEDS average among all public, two-year and one-year, non-degree-granting institutions was about 66 percent, but that includes many institutions whose average program length is almost certainly much shorter than the average length of programs of the Tennessee technology centers. In comparison with more apparently analogous institutions in Ohio, Oklahoma, Florida, and a few other states, most of Tennessee’s technology centers clearly are national leaders in graduation rates. Every year for the past several years at least 80 percent and sometimes as many as 90 percent of the program completers available for job placement are employed in jobs related to their program 12 months after completing their program. The Occupational Education Council accredits the Tech Centers, and one of its requirements is that institutions maintain annual job
placement rates of at least 75 percent. While Tennessee does not use UI data to track the labor market returns for its Technology Center completers, internal surveys indicate consistently high earnings compared with industry/occupational averages.17

A growing consensus in Tennessee holds that the key explanation for the high completion rates in the technology centers can be found in the program structure. Tennessee’s technology centers operate on a fixed schedule, consistent from term to term (usually from 8:00 AM to 2:30 PM, Monday through Friday) with a clearly defined time-to-degree based on clock hours of instruction. The full set of competencies for each program is prescribed up front – students enroll as a cohort in a single coherent program, not individual courses. The programs are advertised, priced, and delivered to the students not as separate courses but as integral programs of instruction. Progression though the program is based not on seat time, but rather on the self-paced mastery of specific occupational competencies.

Clearly, this approach discourages part-time attendance. It asks students to commit to an intensive program of full-time instruction. But it consolidates the classroom time into a fixed period each day and it offers a clear and predictable timetable. The technology centers have found that this certainty allows students to work part-time and to meet family responsibilities. Transparency about tuition, duration, success rates, and job placement outcomes (published clearly in college brochures and websites) apparently enables students to assess costs and benefits, see the reasons for continued attendance, and make the sacrifices necessary to achieve program goals.

The technology centers also build necessary remedial education into the programs, enabling students to start right away in the occupational program they came to college to pursue, building their basic math and language skills as they go and using the program itself as context.
for basic skill improvement. Getting immediately into the program skills that attracted these students to the college in the first place seems to strengthen their motivation and encourage persistence and completion. While the students are held to a common and rigorous basic skill and workforce readiness standard, connecting basic skills development to technical skills demonstrates relevancy and seems to promote success.

Block scheduling gives students greater control and predictability in organizing work, childcare, and other life responsibilities. The students know their full schedule before they even begin and, as importantly, they know when they will be done. Cohort enrollment – grouping students in the same prescribed sequence of instruction that meet daily – also promotes learning communities widely acknowledged as an effective strategy for improving student outcomes in community colleges.

Certificate Program Structure in Most States

To be clear, most community colleges and many non-degree granting institutions do not offer certificate programs with Tennessee’s completion-focused structure. Students seeking an occupationally oriented certificate at most community colleges pursue a traditional “collegiate” pathway to the credential that is very similar to degree pathways. Generally, they must complete 10 to 12 separate courses, each typically counting for three credit hours. Courses usually meet for 60-90 minutes twice a week for 16 weeks over the semester. Many courses have prerequisites so taking the right courses in the proper sequence is critical (and some courses are not offered every semester).

Just as in degree programs, many newly enrolled students in many certificate programs are required to take “development education” courses (over one, two, or even three semesters) to
build their math and language skills before they can even enroll in the program-level math and English courses that often represent a gateway into their field of study. These dev-ed courses are credit bearing but do not count toward the certificate requirements. Piecing together a coherent academic pathway to a credential from an array of individual courses that sometimes are awkwardly and inconsistently scheduled in small chunks over 16 week semesters is hard for students who are often not well-prepared, typically face severe and immediate financial pressures, frequently have family responsibilities, and do not have supports or academic advisors to help guide them through the multiple choices required by complex, conventional academic systems. Most students respond to these scheduling challenges by attending only part-time, trying to squeeze in one or at most two courses each semester and occasionally stopping out for a full semester. The pathway to a certificate, especially one that represents completion of a program of at least one year is long and choppy; things go wrong; students simply drop out.

However, in some community colleges, many certificate pathways do closely resemble the Tennessee tech center model, and there is strong potential for expanding the application of the practices and strategies that constitute the technology center model. While good certificate programs incorporate general education content, they sometimes do this on an “applied” basis, integrating critical reading, writing, math, and problem-solving skill development into the technical instruction. Whole program design, rather than course-by-course design, is common in many certificate programs in colleges where it would never be utilized as an instructional strategy in academic programs.
Recommendations for Action at the National, State, and Institutional Level

Increasing the number of certificate awards for completion of organized programs of study of at least one year is a desirable and feasible strategy for increasing overall postsecondary attainment pursuant to White House goals. More concretely, it is a good strategy for heading off the loss of skilled workers in the national labor force that would otherwise occur as older, more educated workers age out of their working years and are replaced by less educated, younger workers. However, boosting certificate programs for working adults and low-income and minority youth will not happen without purposeful action by national, state, and college leaders. The trajectory of increase in long-term certificate awards is positive but gradual, and it has slowed over the past several years even as, on a long-term basis, certificate growth has outstripped gains in degree awards.

Concerted action at the national, state, and institutional levels is necessary if certificate programs are to achieve their promise in increasing postsecondary attainment for working adults and low-income and minority youth who are not now succeeding in traditional degree pathways to credentials.

At the National Level

Federal government authorities in the Administration and at the Departments of Education and Labor can play an important policy leadership role by promoting sub-baccalaureate certificate attainment – above the threshold of one-year programs – as a viable component of national postsecondary attainment planning and as a valuable outcome of postsecondary participation. Important needs include better tools for the Census Bureau for tracking changes in attainment, more rigorous reporting requirements for IPEDS, more critical
research about certificates by the National Center for Education Statistics, and more careful work by the Department of Labor to relate certificate pathways to occupational outcomes.

National and regional accrediting bodies should step up to greater responsibility in their oversight of long-term certificate programs. That means, among other things, acknowledging the importance of whole program, competency-based programming rather than relying exclusively on course-by-course seat time requirements; supporting, not discouraging, the compression of classroom time through hybrid course design; and promoting the effective use of applied math, English, and general education content.

National employer groups should encourage their affiliates to pay sharper attention to certificates as a measure of postsecondary attainment. Of special importance is the need to help employers see the advantages of long-term versus only short-term certificates for current and prospective employees. There is inevitable tension between the logical desire of most employers to squeeze postsecondary education and training of current employees into work-related short chunks that can be incorporated into employee development plans and their longer term shared interest in a more highly skilled workforce with the higher competencies and platform skills typically associated with longer-term credentials. National employer groups can help promote the importance and legitimacy of long-term certificates as a strategy to pull under-prepared youth and adults to postsecondary attainment.

At the State Level

State higher education authorities should insure that the financial and regulatory framework for public postsecondary education encourages enrollment and success in long-term certificate programs, especially in their community colleges. They should encourage their
community colleges to build out certificate programs with labor market payoff. They should also work with statewide and regional employer groups, general business and sector-specific, to promote the advantages to both employers and working adults of high value certificate programs. State workforce development and higher education agencies have a special responsibility – which few are now meeting – to measure the labor market returns to certificates and, for that matter, to all occupationally oriented programs at the associate’s degree level as well. State agencies should routinely match postsecondary student records against administrative record of the state-maintained Unemployment Insurance programs. Ideally, states would assess earnings outcomes for completers versus non-completers in every program area and also compare earnings of those with postsecondary credentials to a sample of those without in all occupational categories. Importantly, this information should be made widely available to students, prospective students, and their employers.

In some states, public postsecondary institutions have left the certificate marketplace to the for-profit sector. This is not a sound strategy for the long haul. It works for the for-profits as long as federal tuition subsidies are generously available, but it drives them toward high-margin programs and toward students willing to incur high levels of debt. Some proprietary institutions have better success in getting students to completion than do most community colleges, but many have poor graduation rates.

At the Institutional Level

Most of the hard work in developing the promise of high value certificate programs needs to be done at the college level by staff and faculty who have a shared interest in promoting better success at their institutions. In a few states, non-degree-granting one-year and two-year
institutions can be a major player in this work but, in most states, it is the community colleges that must lead.

The first step is to examine the scale and scope of existing certificate programs with a view toward expanding the range of programs in high value occupational fields and boosting enrollment in those programs, especially by working adults and low-income and minority youth. If there is a single state model to hold up for comparison, it is probably Arizona where the community colleges have built out an impressive array of certificate programs with some apparent consistency statewide but also demonstrating responsiveness to regional labor markets. Arizona’s community colleges also offer a strong example of aggressive outreach to build the participation of working adults and low-income and minority youth.

But for colleges the issue is not just scale and scope and expanding access. The Tennessee Technology Center model demonstrates the importance of program structures that promote success and completion. Many community colleges see the completion advantage of certificate programs exclusively in their relatively short length but that is not an adequate foundation for success for strong certificate programs with high labor market relevance and good earnings returns. Time to credential is important and usually one of the reasons that students enter certificate pathways – they see them as shorter and therefore less daunting than degree offerings. But good programs are often nearly as long as degree programs and merely limiting credit or clock hours will not always be feasible and by itself will not necessarily build success. There are several inter-related educational strategies and practices frequently associated with high completion rates in both certificate and degree programs. These strategies and practices should not be seen as a menu from which colleges might pick and choose. Rather, they should
be viewed as a flexible *recipe* for building new programs and rebuilding existing ones in ways that directly promote student success and credential completion.

- **Integrated Program Design** – The full set of competencies for each program would be prescribed up front and students would enroll in a single, coherent program – not individual, unconnected courses. Students would not be required to navigate through complex choices or worry about unnecessary detours. Instructors would share accountability for helping the students successfully complete the whole program.

- **Compressed Classroom Instruction** – Non-classroom-based, asynchronous instruction methods using contemporary technology would supplement traditional classroom instruction to compress seat-time requirements and strengthen the curriculum.

- **Block Schedules** – Programs would operate on a fixed classroom-meeting schedule, consistent from term to term. The students would know their full schedule before they begin, and they would know when they would be done.

- **Cohort Enrollment** – Students would be grouped as cohorts in the same prescribed sequence of classroom and non-classroom instruction. This would promote the emergence of in-person and online learning communities widely acknowledged as an effective strategy for improving student outcomes.

- **Embedded Remediation** – Most remediation would be embedded into the program curriculum, supplemented as necessary through instruction that is parallel and simultaneous to the program, rather preceding it. Students would develop stronger math and English skills as they build program competencies, using the program as
context. There would be clear basic skill outcome expectations with rigorous assessment.

- **Transparency, Accountability, and Labor Market Relevance** – The programs would be advertised, priced, and delivered as high-value programs tightly connected to regional employers and leading to clearly defined credentials and jobs. Clear and consistent information about tuition, duration, success rates, and job placement outcomes would enable students to assess costs and benefits, see the reasons for continued attendance, and make the sacrifices necessary to achieve program goals. Programs would be held accountable to rigorous and consistent national accreditation standards.

- **Program-Based Student Support Services** – Even as these changes in the fundamental structure of certificate programs accelerate persistence to completion, it also should be anticipated that many students will require support services to overcome problems of transportation, child care, and other personal, family, and economic pressures. Ideally, these supports would be embedded into the programs themselves, with faculty helping to identify student needs and supporting resources and using technology and partnerships with employers and community-based organizations to supplement traditional support services.

If community colleges expanded their certificate offerings to all high-demand, good wage jobs in their regional economy, and if they applied in those certificate offerings the strategies and practices associated with high rates of completion, certificate awards and attainment levels could increase much more rapidly than degrees. If we do them right, certificate programs can be a
vitaly important national strategy in boosting postsecondary attainment and maintaining the advances in labor force skills that have helped drive national economic growth.


These calculations do not include undergraduate certificates both because attainment data collected by the U.S. Census Bureau do not include certificates and because only certificates longer than two years in duration would count as “tertiary education” within international frameworks. Efforts are underway to include a new question on the Current Population Survey or American Community Survey that will capture the percentage of adults in the population that have earned certificates.


Some colleges also observe that regional accrediting bodies tend to be driven by traditional academic practices in their limited oversight of occupational programming and often are seen as obstacles to effective certificate programming – failing for example to acknowledge applied learning practices.

The years of attainment measure counts two years for each associate’s degree and 2-4 year certificate, one year for each 1-2 year certificate, and .5 year for each less-than-one-year certificate.


A more detailed review of national level research on labor market returns to certificates is available in Certificates Count: An Analysis of Sub-Baccalaureate Certificates published by Complete College America (December 2010). Available online at http://www.completecollege.org/resources_and_reports/.

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There are thirteen community colleges in Tennessee. They are comprehensive institutions offering pre-baccalaureate-oriented associate’s degrees that transfer directly to four-year colleges, as well as workforce-oriented associate’s degrees and some certificates for programs designed to prepare students for more immediate employment. Headcount enrollment for the community colleges was 92,226 in the fall term of 2009 and the FTE count was 59,993. In 2008-09, the community colleges awarded 6,760 associate’s degrees and 1,591 certificates. Nearly half of the associate’s degrees were “pre-baccalaureate” and designed specifically for transfer to four-year institutions. Some of the other degrees might transfer to some four-year institutions but they are designed primarily for occupational results.


The national average for public, two-year, degree-granting institutions was 20.8 percent.
An exception to this approach can be found in certain healthcare programs (mostly the LPN programs) where applicants are required to demonstrate baseline competencies in math and English. Statewide, the waiting list for technology center LPN programs exceeds three years.


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