MEASURING UP INTERNATIONALLY

Developing Skills and Knowledge for the Global Knowledge Economy

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Executive Summary

Higher education globalizes: its potential contributions are now seen as a crucial component of cross-border economic competitiveness. As anticipated by a French economist, "Each student will be competing with other students throughout the world with similar skills, but also … the efficiency of the universities will be … a major factor in a country's competitiveness. In other words, German universities [will be] competing less among themselves than with Japanese or American universities."[1] Accumulating evidence suggests that a highly qualified workforce contributes substantially to a nation's economic competitiveness, particularly when a large share of the workforce has acquired skills and knowledge through higher education.[2] These findings apply to states as well as nations; those states that improve opportunities for education and training beyond high school advance their residents' employment prospects and the competitiveness of their overall workforce.

Considering the importance of having a well-educated workforce, how is the United States performing in higher education? How do countries with advanced, market-based economies compare on key indicators?

- In the Czech Republic, Korea, Norway, and the Slovak Republic, more than 90% of young adults (ages 20 to 24) have a high school credential (see table 1).[3] In the United States, 86% of this age group has a high school credential, and this share has not changed substantially over the past 25 years. The size and diversity of the school-age population has increased in the United States, as it has in other countries—including those with rising levels of attainment.
- Compared with other countries with advanced economies, the United States places about in the middle on direct assessments of skills and knowledge of eighth graders (see table 3). Korea and Singapore are leaders on several assessments; in none of the

[1] Jacques Lesourne, "The Future of Industrial Societies and Higher Education," *Higher Education Management* 1(3), 1988, pp. 284–97.

[2] In this paper, "higher education" is used to describe education beyond high school. For most of the international comparisons, the data refer to programs of at least two years' duration.

[3] In this paper, a high school "credential" refers to a high school diploma or its equivalent in the United States (for example, the General Education Development diploma [GED]), and to upper-secondary qualifications in many other countries.

assessments does the United States place at top levels. The United States has improved over the past few years, but not enough to place it among the leaders.

- In the United States, about one-quarter of 15-year-olds fall into the lowest proficiency level on assessments of skills and knowledge (see table 4). Because these young people lack even minimal capacities, they are most likely to be excluded from studies beyond high school. In Finland and Korea, less than a tenth of 15-year-olds perform at this low level. In France and Ireland, countries with average performance above but closer to that of the United States, about one-sixth of 15-year-olds demonstrate this low level of proficiency.
- About three of five young adults in the United States can expect to enter higher education at some point in their lifetimes—a rate that has made the United States a world leader on this metric. However, because other countries are experiencing more substantial enrollment growth than the United States, the United States is now one of nine countries with 60% or more of their young adults likely to enter higher education. (See table 5.)
- From the mid-1990s, enrollment growth in the Czech Republic, Greece, Hungary, Iceland, Korea, Sweden, and the United Kingdom largely reflects increases in participation *rates*, as higher proportions of their populations pursue higher education. In the United States, however, enrollment growth during this period reflects population growth as much as increased participation rates. (See table 6.)
- The United States is among the leaders in terms of adult participation in higher education (ages 30 to 64), whether for degrees or for nondegree "upgrading" and "updating" (see table 7). In Sweden and the United Kingdom, adult participation in a wide range of learning activities (including in higher education) continues to be strongly promoted under new policies.
- The United States, however, stands at the average of 20 countries in the production of bachelor's degrees (or their equivalents) as first academic degrees, when differences in population size are taken into account (see table 8). In the United States, a substantial share of the population earns associate's degrees and certificates, usually upon the completion of more vocationally and occupationally oriented study programs. These types of qualifications increasingly find counterparts in other countries.
- The share of the adult population (ages 25 to 64) with degrees has increased everywhere, so that today the United States is joined by Canada, Finland, Japan, and Sweden as leading countries. For younger adults (ages 25 to 34), where more recent trends can be discerned, Belgium, Norway, France, Ireland, Korea, and Spain as well as Canada, Finland, Japan, and Sweden now have degree attainment rates close to or above those of the United States. (See table 9.)

- Young adults (ages 20 to 25) in Sweden and Norway who have completed some college or university education perform better than their peers in the United States on multiple assessments of skills (see table 10). The United States also trails Belgium and the Czech Republic on some measures of skills and learning. In all of these countries except the Czech Republic, participation in higher education has been expanding to relatively high levels.

In sum, although the United States continues to rank among the leaders in comparisons of performance in higher education, its leadership position has eroded. No longer the clear-cut top performer in participation and completion rates, the United States has been joined by other countries that have expanded access to and completion of higher education programs. Further, comparisons of direct measures of learning show the United States as trailing the leading countries. As a result, as U.S. states strengthen higher education opportunity and outcomes, they may find that other countries also have stronger or improving performance levels.

Finally, all countries face challenges in reducing gaps in higher education participation, completion, and learning by income, social class, region, or ethnic group. In Korea and Finland, among other countries, rising rates of attainment at the high school level suggest that historic barriers to access may be falling. In these countries, proficiency levels of school children imply strong foundations for learning. The need to reduce inequality in access, completion, and learning is becoming increasingly important as the workforce demands in many countries increase—as is the case in individual U.S. states and in the United States as a whole. How well each nation responds to this challenge promises to be a key policy question in strengthening the knowledge and skills of its population and the competitiveness of its workforce.

Introduction

National and regional authorities in countries with advanced, market-based economies regard improvements in workforce skills and knowledge as a necessary condition for competitiveness in an emerging global knowledge economy. International economic indicators suggest that the contributions from a highly qualified workforce are substantial, particularly in the advanced-economy countries most similar to the United States.[4] Further, evidence accumulates that these contributions increase as larger shares of a country's population acquire skills and knowledge through higher education.[5]

From this perspective, international comparisons of higher education performance offer useful opportunities to inform state as well as U.S. higher education policy. Many national higher education systems have become similar to those in U.S. states in terms of scale[6] and sub-national governance.[7] Further, the range of economic and workforce profiles represented within advanced-economy countries allows for close matches to the distinctive profiles of many U.S. states. Indeed, the competitiveness of specific states is often described in reference to other countries rather than to other states.

Countries with advanced economies are adopting higher education policies to meet a wide range of needs, including: encouraging more diverse teaching and study programs that respond to varied backgrounds and interests of learners; developing multifaceted arrangements that advance regional economic development initiatives; and promoting cutting-edge research and research applications. The spread of advanced skills and knowledge throughout the population lies at the core of these policies, as a direct aim or

[4] This paper compares the United States with advanced, market-economy countries in North America, Europe, and the Pacific Circle, primarily member countries of the Organisation for Economic Co-operation and Development (OECD).

[5] In this paper, "higher education" is used to describe education beyond high school. For international comparisons, the available data refer to programs of at least two years' duration. For more information on definitions and coverage, see OECD, *Redefining Tertiary Education* (Paris: 1998) and OECD, *Classifying Educational Programmes: Manual for the Implementation of ISCED-97 in OECD Countries* (Paris: 1998).

[6] With important exceptions, of course: France, Germany, Italy, Japan, and the United Kingdom are substantially larger than California, New York, and Texas. Other large OECD countries are Canada, Korea, Mexico, Poland, Spain, and Turkey. Australia is about the size of New York.

[7] In several countries (for example, France, Japan, Spain, Switzerland, and the United Kingdom), national policies aim for regional and/or sector-specific development and seek increased institutional autonomy within strengthened accountability and quality assurance frameworks.

as a condition on which the success of broadly based development and research efforts depends. From the early 1990s, Australia, the Czech Republic, Finland, France, Korea, New Zealand, and the United Kingdom clearly set their higher education systems on a strong growth path. Japan and Korea, driven heavily by strong individual demand for higher education, accommodated growth in public as well as private institutions. China is among the most recent to chart ambitious growth targets. In addition, attention has been given to learning outcomes—what young adults know and are able to do—as indicated by degree completion as well as direct assessments of skills and knowledge.[8]

Considering the public policies that many nations have undertaken to improve opportunities for higher education, how do countries with advanced economies compare in higher education performance? Relying on available data corresponding to some of the indicators used in the graded categories of *Measuring Up*, this paper shows that the United States no longer holds a sole leading position in providing access to, participation in, and completion of higher education.[9] On direct measures of learning, youth and young adults in the United States demonstrate levels of proficiency that place the U.S. near the middle of countries for which data are available. In some countries, improved performance in higher education access, participation, and completion has been achieved without widening disparities among student populations by income, social class, geographic region, or ethnic group.

[8] Policies continue to evolve, partly as conditions change or as the speed, form, and depth of reforms are judged insufficient. See for example: Andreas Schleicher, *The Economics of Knowledge: Why Education is Key for Europe's Success* (Brussels: Lisbon Council, 2006); and Stephan Lancrin, *Building Futures Scenarios for Universities* (Paris: OECD, 2005).

[9] National Center for Public Policy and Higher Education, *Measuring Up 2006* (San Jose: 2006). The comparative data are primarily from the OECD, whose member countries have participated collaboratively and cooperatively over a number of years in the development, refinement, and extension of comparable, useful data on the context, organization, resourcing, outputs, and outcomes of their education systems. For more technical information, see OECD, *OECD Handbook for Internationally Comparative Education Statistics: Concepts, Standards, Definitions and Classifications* (Paris: 2004).

Participation

HIGH SCHOOL COMPLETION

By the turn of this century, high levels of high school completion were near universal among countries with advanced, market-based economies. The United States, once a distinctive leader, places below the top five. States below the overall U.S. average are at a competitive disadvantage.

High rates of high school attainment now feature in most of the advanced market economies to which the United States and U.S. states are commonly compared. Taking the average of country rates, an estimated 77% of young adults ages 20 to 24 have acquired high school credentials (see table 1).[10] The United States, at just over 85%, stands above that average, but below the top five on this measure.

While high school completion rates for the United States have not changed substantially over the past 25 years, other countries have succeeded in achieving significant increases. The long-term trend is apparent in table 2, which displays the proportions of young adults and older adults that have attained at least a high school credential. For the older group (ages 45 to 54) who typically would have completed high school in the 1970s, the rate for the United States is just below 90%. The younger group (ages 25 to 34) would have graduated from high school in the 1990s, and it has a similar rate. Eight countries that trail the United States in attainment rates for the older group—Korea, Norway, Japan, the Slovak Republic, the Czech Republic, Sweden, Canada, and Finland—now match or exceed the attainment rates for younger adults. The improvements across age groups in Korea are the most marked: some 55% of older adults, compared with 97% of younger adults, have the equivalent of at least a high school credential. In Finland, the attainment rate for younger adults (89%) is 16 points higher than for older adults. Although France and Ireland still lag the United States in attainment rates at all ages, younger adults in both countries are now much more likely than older adults to have the equivalent of at least a high school credential.

[10] In this paper, a high school "credential" refers to a high school diploma or its equivalent in the United States (for example, the GED).

Table 1: Young population (ages 20 to 24) with a high school credential, 2003

Country	Percentage with a high school credential
Korea	97
Slovak Republic	94
Norway	94
Czech Republic	91
Canada	88
Finland	86
Sweden	86
United States	*86*
Ireland	85
Hungary	85
New Zealand	84
Austria	84
Belgium	81
France	79
Australia	79
Greece	78
United Kingdom	77
Denmark	76
Germany	73
Switzerland	70
Poland	64
Spain	63
Portugal	46
Turkey	46
Mexico	26
Country average	77

Notes: Includes high school diplomas and similar awards marking the completion of secondary education, as well as alternative routes (for example, GED in the United States). Excludes short vocational and occupational programs at the upper-secondary (that is, high school) level.

Source: Organisation for Economic Co-operation and Development (OECD) database.

Table 2: Adult population with a high school credential, by age, 2003
(ranked by percentage of 25- to 34-year-olds with a high school credential)

Country	Percentage with a high school credential		
	25- to 64-year-olds	25- to 34-year-olds	45- to 54-year-olds
Korea	73	97	55
Norway	87	95	85
Japan	84	94	82
Slovak Republic	87	94	84
Czech Republic	86	92	84
Sweden	82	91	80
Canada	84	90	83
Finland	76	89	73
United States	*88*	*87*	*89*
Denmark	81	86	80
Austria	79	85	75
Germany	83	85	84
New Zealand	78	84	76
Hungary	74	83	75
France	65	80	59
Belgium	62	78	55
Ireland	62	78	52
Netherlands [a]	66	76	62
Switzerland	70	76	68
Australia	62	75	58
Greece	51	72	44
United Kingdom	65	71	64
Luxembourg	59	68	54
Iceland [a]	59	64	58
Italy	44	60	39
Spain	43	60	33
Poland	48	57	46
Portugal	23	37	16
Turkey	26	33	21
Mexico	21	25	18
Country average	66	75	62

[a] 1998 data.

Notes: Includes high school diplomas and similar awards marking the completion of secondary education, as well as alternative routes (for example, GED in the United States). Excludes short vocational and occupational programs at the upper-secondary (that is, high school) level.

Sources: OECD, *Education at a Glance: OECD Indicators* (Paris: 2005), table A1.2a; and OECD database.

In recent years, the share of U.S. young adults with at least a high school credential has held steady at a time when the size and diversity of the school-age population has increased. But this development is not unique to the United States. Australia, Denmark,

the Netherlands, New Zealand, Norway, Sweden, and the United Kingdom have experienced growth in the size of the school-age population; Australia, Austria, Belgium, Canada, France, Germany, Ireland, the Netherlands, New Zealand, Sweden, and Switzerland have significant shares of their populations comprised of noncitizens and foreign-born residents. Of these countries, Australia and Ireland experienced increases of more than five percentage points in rates of secondary school attainment for the young population.[11]

Countries (and states) that have a high percentage of their young population completing high school are also likely to be farther along in preparing their young adults to enter higher education. Anything less than a near-universal high school completion rate is worrisome, on two grounds. First, the challenges of raising the skills and knowledge of large numbers of young and older adults to advanced levels becomes more difficult. Secondly, those lacking high school credentials are largely excluded from the advanced learning opportunities provided in higher education and from the benefits deriving from improved employment options and from the enhanced skills for coping with everyday life in modern societies. The United States led the international community in offering flexible alternatives to these young adults, such as the GED and various other pathways into postsecondary education. Other countries are now pursuing similar strategies, even as they experience increases in the completion of secondary education through conventional routes.[12]

DEMONSTRATION OF KNOWLEDGE AND SKILLS

Higher rates of high school completion should imply relatively strong levels of demonstrated knowledge and skills among youth cohorts. Despite some improvements in the United States on U.S. and international assessments, the United States continues to trail leading countries.

A key question concerns whether young people have acquired the knowledge and skills to best position themselves to enter and succeed in higher education. National comparisons of direct assessments of the knowledge and skills of eighth graders and of

[11] Jean-Christophe Dumont and Georges Lemaître, "Counting immigrants and expatriates in OECD countries: A new perspective," *Social, Employment and Migration Working Papers* (Paris: OECD, 2006); OECD, *Education at a Glance: OECD Indicators* (Paris: 2001); OECD, *Where Immigrant Students Succeed: A Comparative Review of Performance and Engagement in PISA 2003* (Paris: 2006).

[12] For example, new access routes to higher education, from well-developed vocational streams into academic courses and entrance exams, are now in place in Switzerland and Denmark. In the United Kingdom, entrance procedures and qualifications recently have been reviewed. See Admissions to Higher Education Steering Group, *Fair Admissions to Higher Education: Recommendations for Good Practice* ("The Schwartz Report") (London: Department for Education and Skills, 2004).

15-year-olds show that the United States trails other countries in this area. The international comparisons do not align precisely with the measures of school achievement or learning outcomes identified in *Measuring Up*. However, the assessments broadly reflect similar kinds of achievements and capacities. U.S. states receiving top scores on the *Measuring Up* indicators and ratings will find other countries with performance levels similar to if not exceeding their own.

As shown in table 3, eighth graders in the United States perform near the middle of a group of countries in which common tests of mathematics and science achievement were administered in 2003. The results indicate that eighth graders in Singapore, Korea, Japan, and Hungary performed significantly better in both subjects in 2003, and that eighth graders in Italy, Norway, Cyprus, and Chile were significantly weaker. Belgium (Flanders) and the Netherlands join leading countries in mathematics achievement.

Since this assessment was also administered previously, it is possible to examine trends. The comparative picture is mixed (see table 3). The mathematics and science achievements of U.S. eighth graders were markedly higher in 2003 than in 1995, showing the largest positive change in mean scores among the countries for which data are available. However, those improvements did not place the United States among leading countries. This finding serves as an important reminder that favorable gains in absolute performance or relative standing of individual U.S. states within the United States do not necessarily imply strong performance in comparison with countries or regions beyond U.S. borders.

A separate assessment gauged 15-year-olds' knowledge of mathematics and their ability to apply it. Results locate the United States near the middle of countries with advanced market economies (see table 4), with 15-year-olds in some 20 countries demonstrating capacities significantly higher than their U.S. peers. In Finland, Korea, the Netherlands, Canada, Australia, New Zealand, Sweden, and Ireland, 15-year-olds also demonstrate greater proficiency in reading and science.[13]

[13] The data come from the OECD's Programme for International Student Assessment (PISA). OECD, *Learning for Tomorrow's World: First Results from PISA 2003* (Paris: 2004).

Table 3: Eighth grade mean scores in mathematics and science, 1995 and 2003
(ranked by mean scores in mathematics, 2003)

	Mathematics			Science		
	1995	2003	Change	1995	2003	Change
Singapore	609	605	(3)	580	578	(3)
Korea	581	589	***8***	546	558	***13***
Japan	581	570	***(11)***	554	552	(2)
Belgium (Flemish Community)	550	537	***(13)***	533	516	***(17)***
Netherlands	529	536	7	541	536	(6)
Hungary	527	529	2	537	543	6
Malaysia	—	508		—	510	12
Russian Federation	524	508	***(16)***	523	514	(9)
Slovak Republic	534	508	***(26)***	532	517	***(15)***
Australia	509	505	(4)	514	527	***13***
United States	*492*	*504*	***12***	*513*	*527*	***15***
Sweden	540	499	***(41)***	553	524	***(28)***
United Kingdom (Scotland)	—	498		501	512	10
New Zealand	501	494	(7)	511	520	9
Italy	—	484		—	491	
Norway	498	461	***(37)***	514	494	***(21)***
Cyprus	468	459	***(8)***	452	441	***(11)***
Chile	—	387		—	413	
Country average		466			515	

Notes: Change calculated by subtracting 1995 from 2003 estimate using unrounded data. Figures in parentheses refer to declines. Figures in bold italic refer to significant change, at .05 level.

Source: P. Gonzalez et al., *Highlights from the Trends in International Mathematics and Science Study 2003*, NCES 2005-005 (Washington, D.C.: U.S. Department of Education, National Center for Education Statistics: 2004).

For 2003 mathematics scores: Singapore, Korea, Japan, Belgium, Netherlands, and Hungary are significantly *highe*r than the U.S. average. Italy, Norway, Cyprus, and Chile are significantly *lower* than the U.S. average.

For 2003 science scores: Singapore, Korea, Japan, and Hungary are significantly *higher* than the U.S. average. Belgium, Malaysia, the Russian Federation, the Slovak Republic, the United Kingdom (Scotland), Italy, Norway, Cyprus, and Chile are significantly *lower* than the U.S. average.

Table 4: Percentage of 15-year-old students at each level of proficiency on the PISA mathematics scale, 2003 (ranked by mean score)

	Mean score	Percentage of students at each level of proficiency				
		Level 1 and below	Level 2	Level 3	Level 4	Level 5 and above
Hong Kong	550	10.4	13.9	20.0	25.0	30.7
Finland	544	6.8	16.0	27.7	26.1	23.4
Korea	542	9.6	16.6	24.1	25.0	24.8
Netherlands	538	11.0	18.0	23.0	22.6	25.5
Japan	534	13.3	16.3	22.4	23.6	24.3
Canada	532	10.1	18.3	26.2	25.1	20.3
Belgium	529	16.5	15.9	20.1	21.0	17.5
Macao	527	11.1	19.6	26.8	23.7	18.6
Switzerland	527	14.5	17.5	24.3	22.5	21.2
Australia	524	14.3	18.6	24.0	23.3	19.8
New Zealand	523	15.0	19.2	23.2	21.9	20.7
Czech Republic	516	16.6	20.1	24.3	20.8	12.9
Iceland	515	15.0	20.2	26.1	23.2	15.4
Denmark	514	15.4	20.6	26.2	21.9	15.9
France	511	16.6	20.2	25.9	22.1	15.1
Sweden	509	17.3	21.7	25.5	19.8	15.7
Austria	506	18.8	21.6	24.9	20.5	14.2
Germany	503	21.6	19.0	22.6	20.6	16.3
Ireland	503	16.8	23.6	28.0	20.2	11.3
Slovak Republic	498	19.9	23.5	24.9	18.9	12.7
Norway	495	20.8	23.7	25.2	18.9	11.4
Luxembourg	493	21.7	22.9	25.9	18.7	10.9
Hungary	490	23.0	23.8	24.3	18.2	10.7
Poland	490	22.0	24.8	25.3	17.7	10.1
Spain	485	23.0	24.7	26.7	17.7	7.9
United States	*483*	*25.7*	*23.9*	*23.8*	*16.6*	*10.0*
Latvia	483	23.6	25.5	26.3	16.6	7.9
Russian Federation	468	30.2	26.4	23.1	13.2	7.0
Portugal	466	30.1	27.1	24.0	13.4	5.4
Italy	466	31.9	24.7	22.9	13.4	7.0
Greece	445	39.0	26.3	20.2	10.6	4.0
Turkey	423	52.3	22.1	13.5	6.8	5.5
Uruguay	422	48.1	24.2	16.8	8.2	2.8
Thailand	417	54.0	25.4	13.7	5.3	1.7
Mexico	385	66.0	20.8	10.1	2.7	0.4
Country average	500	21.4	21.1	23.7	19.1	15.6

Source: OECD, *Learning for Tomorrow's World: First Results from PISA 2003* (Paris: 2004).

All countries are significantly above the U.S. average, except: Hungary, Poland, Spain, Latvia and the Russian Federation (not significantly different from the U.S. average) and Portugal, Italy, Greece, Turkey, Uruguay, Thailand, and Mexico (significantly below the U.S. average).

For the United States, the overall average levels of knowledge and skills of 15-year-olds can be attributed partly to the very weak capacities of about a quarter of the age group. For a few leading countries, that share is below 10%; for several others, the proportion is about 16%.

Average performance masks variation. The spread of scores shown in table 4 provides a better indication of the proportions of young people who demonstrate knowledge and capacities at or above key thresholds. These data reveal that some countries perform better than others in enabling most of their young people to acquire knowledge and skills needed to enter and succeed in higher education. In the United States, about one in four 15-year-olds (25.7%) perform at the lowest proficiency level on this mathematics assessment. These young people lack even minimal educational capacities and as a result are much more likely to be excluded from studies beyond high school. On this measure, the United States is placed near the average of all countries with data. The proportions for Finland and Korea are below one in ten (6.8% and 9.6%, respectively). For France and Ireland, two countries with mean scores above but closer to the U.S. average, the proportions are about one in six (respectively, 16.6% and 16.8%).

ENTRY INTO HIGHER EDUCATION

More than half of young adults in countries with advanced market economies can expect to enter higher education at some point in their lifetimes. Eight countries now have entry rates at or above those of the United States. Outside the United States, growth in higher education enrollments from the mid-1990s has been substantial and can be attributed to success in increasing the rates of participation in higher education.

In the United States, the higher education entry rate is an estimated 63%, which means that about three of every five young adults are likely to enter an associate's degree program in a community college or a bachelor's degree program in a four-year college or university.[14] On this metric, the United States is one of nine countries with advanced market economies that have rates exceeding 60%, with Iceland, New Zealand, Sweden and Finland leading this group (see table 5).

The U.S. figure refers to entry into any associate's and bachelor's degree program, whether academic or vocationally and occupationally oriented. For other countries, the latter types of higher education are excluded. A number of countries that have somewhat lower entry rates into programs leading to a first academic degree similar to or longer

[14] For an explanation of this measure, see "How to read table 5" on the following page.

than the bachelor's degree record high entry rates for vocationally or occupationally oriented programs. For example, in New Zealand, Korea, the United Kingdom, Japan, France, and Belgium, entry rates into these kinds of programs exceed 30%. In sum, large proportions of young adults can expect to enter some type of higher education in the majority of countries that compete with the United States and with individual states.

Entry rates: How to read table 5

Table 5 presents the higher education entry rate for each country, specifically the percentage of the population enrolling for the first time in higher education. The data cover new students in programs leading to academic degrees such as associate's or bachelor's degrees (or their first degree equivalents in other countries). For the U.S., new entrants in vocationally or occupationally oriented associate degree programs are included. For all countries, new entrants in vocationally oriented programs of less than two years' duration are not included.

To obtain the entry rate, the number of new students at each year of age is divided by the size of the overall population at each year of age. (For ages 30 and above, the calculations refer to five-year intervals.) The age-specific shares are then added to produce the "net entry rate." Calculated in this way, the net entry rate allows for differences among countries in the routes followed and the ages at entry to higher education. (For some countries, available information permits the calculation only of gross entry rates. The gross entry rate is obtained by dividing all new entrants for a program type by the size of the population at the typical age of entry. Compared with the net entry rate, the gross entry rate is more likely to be influenced by year-to-year changes in the size of the population at the typical age of entry.)

This measure of the entry rate of first-time enrollment in higher education differs from other measures commonly reported in the United States. In its analysis of the higher education "pipeline," the National Center for Public Policy and Higher Education calculates the chance for college as the share of young adults (ages 18 to 24) who are enrolled in any postsecondary education program. The U.S. Census Bureau reports the share of prior-year high school graduates enrolled in college in the current year. The National Center for Education Statistics' longitudinal studies follow a cohort from their early teens to their early 30s, enabling a calculation of the share of the cohort enrolled at any time through early adulthood.

Table 5: Entry rates into higher education, 2003

Country	New students as a percentage of the population
Iceland	83
New Zealand	81
Sweden	80
Finland	73
Poland [a]	70
Hungary	69
Australia	68
Norway	68
United States [b]	*63*
Italy	54
Denmark	53
Netherlands	52
Korea [a]	50
United Kingdom	48
Spain	46
Japan [a]	42
Ireland	41
Slovak Republic	40
France	39
Switzerland	38
Germany	36
Austria	35
Belgium	34
Czech Republic	33
Mexico	28
Turkey	23
Country average	53

[a] Calculated as gross entry rate (new entrants divided by the population at the typical age of entry).

[b] Includes vocationally and occupationally oriented associate's degree programs.

Sources: OECD, *Education at a Glance: OECD Indicators* (Paris: 2005), table C2.2; and OECD database.

Higher education enrollments have grown substantially from 1995 to 2003 (see table 6). Averaging across countries, enrollments grew by about one-third over this period—a continuation of a widely shared trend of robust growth dating back to the mid-1980s. For most of the countries for which data are available, increases in the size of the underlying populations were relatively modest, so enrollment growth is due mostly to increased participation rates, as these countries both drew more deeply from the population and retained those enrolled for longer periods. Several of the countries with substantial

growth in enrollments started in 1995 with relatively low levels of participation in higher education: Hungary, Greece, the Czech Republic, and Iceland. However, several other countries improved participation rates from already relatively higher levels: Korea, Sweden, the United Kingdom, and Australia.

For the United States, increases in enrollments from 1995 to 2003 are accounted for as much by increases in population in the relevant age groups as by increases in participation rates. That is, higher education enrollments in the United States are expanding as much from increases in the size of the young adult population as from improvements in access and participation.

Taken as a whole, these data confirm both the growth trend of higher education enrollments over time and the success of many countries in raising their rates of participation in higher education to U.S. levels.

Enrollment trends: How to read table 6

Table 6 compares enrollment trends across countries by using indices that show each country's growth or decline since 1995. In the left column, the index number for each country is calculated by dividing headcount enrollment in 2003 by enrollment in 1995, then multiplying the quotient by 100. Calculated in this way, index numbers reveal the relative magnitude of enrollment growth (or decline) and permit comparisons among countries of the rates of change.

Index numbers above 100 indicate enrollment increases over the eight-year period; larger index numbers indicate greater increases. Index numbers below 100 indicate enrollment declines.

The indices in the right two columns identify the primary sources of the change in enrollments. The impact of demographic change on total enrollment (middle column) is calculated by applying the enrollment rates in 1995 to the population data for 2003 (that is, population change is taken into account while the enrollment rates by single year of age are fixed at their levels in 1995). The impact of changing participation rates (right column) is calculated by applying the enrollment rates in 2003 to the population data for 1995 (that is, the enrollment rates for 2003 are multiplied by the population by single year of age for 1995 to obtain the total number of students that could have been expected in 2003 if the population had not changed over the period). The results of each calculation are compared to actual enrollment in 1995 to obtain index numbers that identify the impact of changes in population size and the impact of changes in participation rates, respectively, from 1995 to 2003.

Table 6: Changes in higher education enrollments, 1995 to 2003 (1995 enrollment = 100)
(ranked by change in the rate of participation from the age group)

Country	Change in total enrollment	Change in enrollment accounted for by:	
		Change in the size of relevant age group	Change in the rate of participation from the relevant age group
Hungary	229	89	232
Greece	189	105	180
Korea	159	84	175
Czech Republic	170	93	174
Iceland	183	106	174
Sweden	146	95	155
Portugal	133	95	140
Denmark	122	90	137
Mexico	146	109	134
United Kingdom	126	97	131
Ireland	142	110	128
Spain	121	93	127
Australia	129	103	126
Finland	125	100	126
Norway	117	92	126
Belgium	116	97	122
Germany	104	85	119
France	103	94	110
United States	*112*	*107*	*105*
Austria (2002)	93	67	101
Average of above	133	96	136

Notes: See accompanying text box for explanation of indices and calculations.

Sources: OECD, *Education at a Glance: OECD Indicators 2005* (Paris: 2005), table C2.3. U.S. Bureau of the Census, *Current Population Reports—School Enrollment, 2005.* All data come from a special survey completed by participating OECD countries, except data for the United States. For the United States, the indices are calculated using data from the October Current Population Survey (CPS), as reported by the U.S. Bureau of the Census in table 1 of the annual series. The calculations here refer to the period 1995 to 2003. The differences in data sources and definitions reduce comparability of the U.S. and OECD survey data.

ADULT PARTICIPATION IN HIGHER EDUCATION

Higher education institutions in all countries provide important learning opportunities for adults, both in terms of qualifications and skills. The United States is a leading country in this area, but the comparative advantage now afforded by higher education in the United States may well diminish as other countries target policies toward adults.

Adults beyond the traditional student age represent an important population for higher education through opportunities for degree studies as well as for nondegree, advanced courses. Table 7 offers measures of both: first, for those ages 30 to 64 with at least a high school credential who are seeking degrees; and, second, for the same population taking any course offered by a higher education institution. On the first measure, adult participation in higher education in the United States falls in the middle of countries for which data are available: an estimated 4% of U.S. adults say that they are enrolled to obtain a degree, compared to more than 7% in New Zealand and the United Kingdom and less than 2% in Poland, Belgium, and Switzerland. For older adults (ages 45 to 64), estimates of participation rates in degree programs place the United States near the bottom of these nine countries, at about 1% compared to 4% or more in Canada, New Zealand, and the United Kingdom.

If participation in broader nondegree as well as degree opportunities is included, the United States stands near the top: about 1 in 10 adults (an estimated 10.9%) pursue nondegree as well as degree-seeking studies at a higher education institution compared with an estimated 1 in 5 in New Zealand (18.1%) and less than 1 in 20 in Poland, Belgium, or Switzerland (3.1, 4.0 and 4.5%, respectively). For older adults (ages 45 to 64), Belgium joins the United States in delivering courses to about 1 in 12 or 13 adults.

These comparisons refer to all adults with at least a high school credential or its equivalent. Roughly 1 in 18 (5.7%) adults in the United States with a high school credential but without a college certificate or degree participated in a course offered by a college or university in 1994–95. This is nearly twice or more the rate for the United Kingdom, Canada, the Netherlands, Switzerland, Poland, and Belgium.[15] Two factors temper this otherwise favorable position for the United States. First, other countries have developed substantial, organized policies for upgrading and updating courses outside of higher education institutions. Second, in several countries with such policies (for example, Sweden, the United Kingdom, and France), several initiatives seek to increase the capacities of higher education to serve the learning needs of adults.

[15] Detailed comparisons of percentages of adult participation by prior educational attainment, gender, and occupation can be found in OECD, *Education Policy Analysis* (Paris: 1999).

Table 7: Adult participants in higher education as a percentage of the population with at least a high school credential, 1994–95
(ranked by participation of adults seeking higher education degrees)

Country	Adults ages 30 to 64 seeking higher education degrees [a]			Adults ages 30 to 64 following any course offered by higher education institutions [b]		
	Total	30- to 44-year-olds	45- to 64-year-olds	Total	30- to 44-year-olds	45- to 64-year-olds
New Zealand	8.1	10.3	4.5	18.1	20.0	15.2
United Kingdom	7.5	9.9	4.1	9.1	11.0	6.4
Canada	5.8	6.3	5.0	7.2	9.0	5.7
Sweden	4.9	6.6	2.7	—	—	—
United States	*4.2*	*7.2*	*1.1*	*10.9*	*13.6*	*8.2*
Netherlands	3.3	4.2	2.0	7.2	8.3	5.8
Poland	1.7	2.6	0.4	3.1	5.1	0.2
Belgium (Flanders)	0.9	1.1	0.6	4.0	3.5	7.6
Switzerland	0.9	1.2	0.5	4.5	3.0	5.2

[a] Based on responses to a question that began, "Were you taking this training or education toward…" University-based or other higher education degrees (sub-degree through advanced certificate) are included; trade/vocational diplomas or certificates are excluded.

[b] Based on responses to a question that began, "Was this training given by…" University and other higher education institutions are included. Fully private colleges and business colleges are excluded. The background questionnaire for Sweden did not collect this information.

Notes: Estimates are based on responses in the background questionnaire for the International Adult Literacy Survey. Countries adapted individual items to reflect the options available within their borders. Participation in any form and of any duration is recorded, and no account is taken of the intensity of the learning activity or of the learning realized. Biases introduced through sampling and response errors, nonresponse, or coding differences limit confidence in the point estimates. Depending on the country, participation rates may be over- or under-estimated by 10% or more.

Sources: Special analysis of survey responses to the International Adult Literacy Survey (IALS). See OECD, *Education Policy Analysis* (Paris: 1999).

Graduation, Attainment, and Learning

COMPLETION OF HIGHER EDUCATION

Other countries now lead the United States in the completion of initial higher education degrees relative to the population.

Across all countries with available data, higher education graduates receiving a bachelor's degree or its equivalent as a first academic degree come to about one-third of the population at the typical age of graduation (see table 8). The United States, at 33%, stands at the country average. Ten countries place higher: Australia, Finland, Poland, Iceland, Denmark, Norway, the United Kingdom, Ireland, Sweden, and Japan.

Table 8 focuses on "first" academic higher education degrees as a key benchmark of the skills and knowledge acquired through higher education. Other qualifications, below and above the bachelor's degree or its equivalent (as an initial academic degree) are excluded.[16] In the United States, associate's degrees and certificates account for about 40% of the college credentials earned annually. The United States has been a leader in providing opportunities for sub-bachelor's awards, but other countries have expanded access to a wide range of pathways and programs in the initial post–high school years, such as: alternative routes to initial higher education degrees in Denmark, Switzerland, and the United Kingdom; broad arrangements to promote the recognition of acquired skills and knowledge in Ireland and New Zealand; and long-standing as well as relatively new advanced vocational education programs in the German-speaking countries, Scandinavia, and Mexico. For this group of countries, the growing volume of bachelor's or equivalent first academic degrees is now accompanied by an increased number of awards in other programs that are usually shorter and vocationally and occupationally oriented.

[16] The "first" or "main" recognized higher education degree differs among countries. At present, the long first degree of four to six years continues to be seen as the "first" or "main" higher education degree by students, university faculty, and employers in many continental European and Scandinavian countries. However, efforts in Europe to introduce a common degree structure building on a three-year initial qualification, similar to the U.S. bachelor's degree, are advancing. For details on degree structures and how qualifications are located on the international classification system, see OECD, *Classifying Educational Programmes: Manual for the Implementation of ISCED-97 in OECD Countries* (Paris: 1998) and OECD, *Education at a Glance: OECD Indicators 2005*, Annex 3 (Paris: 2005).

Table 8: Graduates awarded first higher education degrees (bachelor's or equivalent), 2003

Country	Ratio of graduates to the population at the typical age of graduation
Australia	49
Finland (2002)	49
Poland	44
Iceland	43
Denmark (2002)	42
Norway	40
United Kingdom	38
Ireland	37
Sweden	35
Japan	34
United States	*33*
Spain	32
France	27
Italy (2002)	27
Slovak Republic	25
Switzerland	22
Germany	20
Austria	19
Czech Republic	17
Turkey	10
Country average	32

Notes: Excludes certificates and degrees awarded for programs of less than three years (such as associate's degrees), vocationally and occupationally oriented programs, and "second" or further degree programs (in the U.S., post-bachelors).

Sources: OECD, *Education at a Glance: OECD Indicators* (Paris: 2005), table A3.1.

First-time, first-degree graduates: How to read table 8

Table 8 presents the number of first academic higher education degrees of three years' duration or longer as a percentage of the population at the typical age of graduation. The measure focuses on first-time graduates—that is, those completing an initial academic degree program for the first time.

Countries differ in the duration of first academic degrees (typically ranging from 3 to 5 years and, in some instances and for some degree programs, longer). Whether as a bachelor's or some other degree title of different duration, the qualifications classified as "first degrees" have in common their standing as the first qualification (of at least three years duration) awarded to graduates. In this table, the degree figures exclude associate's degrees (and other programs of less than three years' duration), qualifications from primarily vocationally or occupationally oriented programs, and "second" or further higher education degrees (in the U.S., post-bachelor's). Graduates may be of any age.

CHANGE IN HIGHER EDUCATION COMPLETION OVER TIME

In other countries more than in the United States, there is a discernable growth in higher education degrees acquired, and it is particularly marked for younger cohorts.

In line with the global trend of rising participation in higher education, the share of the adult population with higher education degrees has increased. In 1998, 11 countries had at least 25% of their population (ages 25 to 64) with a higher education degree.[17] By 2003, the most recent for which comparative data are available, 16 countries reached that level (see table 9). In that year, the United States, with a higher education attainment rate for the adult population of 38%, trailed only Canada. The comparable rates for Japan, Finland, and Sweden were within five points of that of the United States.

A closer look at the educational attainment of younger adults (ages 25 to 34), however, shows that other countries now approach or exceed U.S. higher education attainment rates. That is, rising attainment in countries such as Norway, Belgium, Korea, Ireland, Spain, and France—as well as Canada, Japan, Finland, and Sweden—are being achieved through substantially higher attainment rates in this younger cohort (see table 9). While the United States may have been among the first to bring relatively large numbers of young people through high school and into higher education, other countries with advanced market economies have closed the gap in higher education attainment (and moved beyond the United States in high school completion rates).

[17] OECD database.

Table 9: Percentage of adult population with higher education degrees, by program type and age, 2003 (ranked by all higher education degrees, 25- to 64-year-olds)

Country	All higher education degrees		Bachelor's, master's, first professional, and doctoral degrees (or equivalents)		Associate's degrees and vocationally oriented degrees	
	25- to 64-year-olds	25- to 34-year-olds	25- to 64-year-olds	25- to 34-year-olds	25- to 64-year-olds	25- to 34-year-olds
Canada	44	53	21	26	22	25
United States	*38*	*39*	*29*	*30*	*9*	*9*
Japan	37	52	21	26	17	25
Finland	33	40	16	23	17	17
Sweden	33	40	18	24	15	17
Denmark	32	35	25	27	7	8
Australia	31	36	20	25	11	11
New Zealand	31	32	16	21	15	12
Norway	31	40	29	37	2	2
Belgium	29	39	13	18	16	21
Korea	29	47	22	30	8	17
United Kingdom	28	33	19	24	9	9
Switzerland	27	29	18	20	9	10
Iceland (2002)	26	28	20	23	6	6
Ireland	26	37	16	23	10	14
Spain	25	38	18	26	7	12
Germany	24	22	14	14	10	8
Netherlands (2002)	24	28	22	25	3	2
France	23	37	14	22	9	16
Greece	18	24	13	17	6	7
Austria	15	15	7	8	7	7
Hungary	15	17	15	17	—	—
Luxembourg	15	19	6	7	9	12
Mexico	15	19	14	16	2	3
Poland	14	20	14	20	—	—
Czech Republic	12	12	12	12	—	—
Slovak Republic	12	13	11	13	1	1
Portugal	11	16	8	13	2	3
Italy (2002)	10	12	10	12	—	—
Turkey	10	11	10	11	—	—
Country average	24	29	16	20	8	9

Notes: Excludes certificates and degrees awarded for programs of less than two years.

Sources: OECD, *Education at a Glance: OECD Indicators* (Paris: 2005), table A1.3a; and OECD database.

STUDENT LEARNING

Young adults who have completed some college or university education in the United States demonstrate abilities that place them at the average of countries for which comparative assessments have been undertaken.

What can be said about student learning? Although there is very limited direct information with which to compare graduates,[18] one such measure allows comparisons of demonstrated proficiency in prose, document, and quantitative tasks included in an assessment administered to adults in 19 countries (see table 10).[19] Young adults in Sweden and Norway who have completed some college or university education perform better than their peers in the United States in all three domains. The performance of the United States trails that of the Czech Republic in document and quantitative domains, and Belgium in quantitative domains. For each of these countries except the Czech Republic, their systems of higher education have expanded from the 1980s to accommodate large proportions of the relevant age group. As a result, the differences in performance do not appear to be explained solely by differences in the selectivity of entry into higher education.

[18] Indirect measures have been used for some fields and in some countries (for example, program accreditation via cross-border bodies, highly integrated joint degrees/student exchange, and Graduate Record Examinations [GREs] of home country students pursuing graduate studies in the United States).

[19] The assessments are from the International Adult Literacy Survey (IALS), an international study aimed at documenting the capacities of adults to demonstrate proficiency in prose, document, and quantitative domains. IALS is similar in aim to the National Adult Literacy Survey (in the United States), and its more recent update. See National Center for Education Statistics, *National Assessment of Adult Literacy: A First Look at the Literacy of America's Adults in the 21st Century* (Washington: 2006). See also results from an update and extension of IALS, the Adult Literacy and Life Skills Survey carried out in a few countries in 2003, in Statistics Canada and OECD, *Learning a Living: First Results of the Adult Literacy and Life Skills Survey* (Ottawa and Paris: 2005).

Table 10: Adult literacy: Mean scores for population ages 20 to 25 with some college or university education (countries ranked by prose score)

Country	Prose	Document	Quantitative
Sweden [b]	341	339	333
Finland [d]	336 [e]	341 [e]	323 [e]
Germany [d]	329 [e]	345 [e]	344 [e]
Norway [b]	327	341	331
Czech Republic [d]	325	348	354
Netherlands [b]	322	321	322
Belgium (Flanders) [c]	320	323	332
Portugal [d]	315	295	305
Australia [b]	313	312	308
New Zealand [b]	313	311	302
United States [a]	*313*	*312*	*310*
Canada [b]	310	323	311
Ireland [c]	307	300	303
United Kingdom [c]	305	304	301
Denmark [c]	304	327	321
Switzerland [b,d]	300	316	308
Italy [d]	293	286	285
Poland [b]	292	292	290
Hungary [d]	287	301	325

[a] 1992 data. [b] 1994 data. [c] 1996 data. [d] 1998 data. [e] Unreliable estimate.

Notes: Values for the U.S. are taken from the U.S. National Adult Literacy Survey (NALS) because a sampling anomaly limits the comparability of the International Adult Literacy Survey (IALS) for this age group.

Source: Statistics Canada, *Benchmarking Adult Literacy in North America: An International Comparative Study* (Ottawa: 2001), table 3.

Mean prose scores for Sweden and Norway are significantly higher than those for United States. Mean prose scores for Poland and Hungary are significantly below the U.S. average.

Conclusion

Taken together, the comparative information about participation, graduation, completion, and learning documents a sweeping shift toward greater levels of participation in higher education among a broad range of countries with advanced, market-based economies. That the United States stood in the late 1980s as a leading country explains partly why growth and improvements in access, participation, and completion are more clearly seen in other countries that previously relied on selective routes into their relatively small-volume higher education systems.

On several measures, the United States no longer holds the leading position. Policies adopted in a number of countries over the past 20 years have helped to foster increased rates of completion at the high school level, improved access to higher education, and stable if not higher rates of degree completion. The consequence is a trend across these countries toward convergence at higher rates of participation and completion in higher education.

In addition, at both the high school and higher education levels, measures of learning quality show U.S. performance below the leading countries. This general finding is noteworthy for two reasons. Evidence of high-quality learning beyond U.S. borders means that leading U.S. states should take no particular comfort in their position relative to other U.S. states; gains within and across states on assessments within the United States might be important milestones, but they do not imply leading positions internationally. Further, leading countries have demonstrated relatively high levels of achievement and proficiency even as participation and completion rates have increased.

Unequal rates of access, completion, and learning within each country—by income, social class, region, or ethnic group—stand as a continuing challenge in all countries. Very high rates of high school completion in Finland and Korea, for example, suggest that an important barrier to higher education access may have been substantially reduced. In these two countries, the knowledge and skills demonstrated by upwards of 90% of young adults mean that those who now pursue studies in higher education are more likely to have capacities that will enable them to succeed. Improvements notwithstanding, more will need to be done to widen further higher education opportunities in each country—

and in each U.S. state—to strengthen the skills and knowledge of the population and the competitiveness of the workforce in the emerging global economy.

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Measuring Up Internationally: Developing Skills and Knowledge for the Global Knowledge Economy, by Alan Wagner (September 2006, #06-7). In comparing the performance of the United States in higher education with that of advanced, market-economy countries across the globe, this report finds that the United States' leadership position has eroded.

Measuring Up 2006: The National Report Card on Higher Education (September 2006). *Measuring Up 2006* consists of a national report card for higher education (report #06-5) and 50 state report cards (#06-4). The purpose of *Measuring Up 2006* is to provide the public and policymakers with information to assess

and improve postsecondary education in each state. For the first time, this edition offers international comparisons with states and the nation as a whole. Visit www.highereducation.org to download *Measuring Up 2006* or to make your own comparisons of state performance in higher education.

Technical Guide for* Measuring Up 2006: *Documenting Methodology, Indicators, and Data Sources (September 2006, #06-6).

Checks and Balances at Work: The Restructuring of Virginia's Public Higher Education System, by Lara K. Couturier (June 2006, #06-3). This case study of Virginia's 2005 Restructured Higher Education Financial and Administrative Operations Act examines the restructured relationship between the commonwealth and its public colleges and universities. The act gives more autonomy to the public colleges but checks it with new accountability targeted directly to the needs of the state.

American Higher Education: How Does It Measure Up for the 21st Century? by James B. Hunt Jr. and Thomas J. Tierney with a foreword by Garrey Carruthers (May 2006, #06-2). These essays by former Governor James B. Hunt Jr. and business leader Thomas J. Tierney lay out in succinct fashion the requirements of both our nation and our states for new and higher levels of performance from America's colleges and universities.

Claiming Common Ground: State Policymaking for Improving College Readiness and Success, by Patrick M. Callan, Joni E. Finney, Michael W. Kirst, Michael D. Usdan, and Andrea Venezia (March 2006, #06-1). To improve college readiness and success, states can develop policies that better connect their K–12 and postsecondary education systems. However, state action in each of the following policy areas is needed to create college-readiness reform: alignment of coursework and assessments; state finance; statewide data systems; and accountability.

Measuring Up on College-Level Learning, by Margaret A. Miller and Peter T. Ewell (October 2005, #05-8). In this report, the National Forum on College-Level Learning proposes a model for evaluating and comparing college-level learning on a state-by-state basis, including assessing educational capital. As well as releasing the results for five participating states, the authors also explore the implications of their findings in terms of performance gaps by race/ethnicity and educating future teachers.

The Governance Divide: A Report on a Four-State Study on Improving College Readiness and Success, by Andrea Venezia, Patrick M. Callan, Joni E. Finney, Michael W. Kirst, and Michael D. Usdan (September 2005, #05-3). This report, supported by case studies in Florida, Georgia, New York, and Oregon, identifies and examines policy options available to states that are interested in creating sustained K–16 reform.

The Governance Divide: The Case Study for Florida, by Andrea Venezia and Joni E. Finney (2006, #05-4).

The Governance Divide: The Case Study for Georgia, by Andrea Venezia, Patrick M. Callan, Michael W. Kirst, and Michael D. Usdan (2006, #05-5).

The Governance Divide: The Case Study for New York, by Andrea Venezia, Michael W. Kirst, and Michael D. Usdan (2006, #05-6).

The Governance Divide: The Case Study for Oregon, by Andrea Venezia and Michael W. Kirst (2006, #05-7).

Borrowers Who Drop Out: A Neglected Aspect of the College Student Loan Trend, by Lawrence Gladieux and Laura Perna (May 2005, #05-2). This report examines the experiences of students who borrow to finance their educations, but do not complete their postsecondary programs. Using the latest comprehensive data, this report compares borrowers who drop out with other groups of students, and provides recommendations on policies and programs that would better prepare, support, and guide students—especially low-income students—in completing their degrees.

Case Study of Utah Higher Education, by Kathy Reeves Bracco and Mario Martinez (April 2005, #05-1). This report examines state policies and performance in the areas of enrollment and affordability. Compared with other states, Utah has been able to maintain a system of higher education that is more affordable for students, while enrollments have almost doubled over the past 20 years.

Measuring Up 2004: The National Report Card on Higher Education (September 2004). *Measuring Up 2004* consists of a national report card for higher education (report #04-5) and 50 state report cards (#04-4). The purpose of *Measuring Up 2004* is to provide the public and policymakers with information to assess and improve postsecondary education in each state. For the first time, this edition provides information about each state's improvement over the past decade. Visit www.highereducation.org to download *Measuring Up 2004* or to make your own comparisons of state performance in higher education.

> ***Technical Guide Documenting Methodology, Indicators, and Data Sources for*** **Measuring Up 2004** (November 2004, #04-6).

Ensuring Access with Quality to California's Community Colleges, by Gerald C. Hayward, Dennis P. Jones, Aims C. McGuinness, Jr., and Allene Timar, with a postscript by Nancy Shulock (May 2004, #04-3). This report finds that enrollment growth pressures, fee increases, and recent budget cuts in the California Community Colleges are having significant detrimental effects on student access and program quality. The report also provides recommendations for creating improvements that build from the state policy context and from existing promising practices within the community colleges.

Public Attitudes on Higher Education: A Trend Analysis, 1993 to 2003, by John Immerwahr (February 2004, #04-2). This public opinion survey, prepared by Public Agenda for the National Center, reveals that public attitudes about the importance of higher education have remained stable during the recent economic downturn. The survey also finds that there are some growing public concerns about the costs of higher education, especially for those groups most affected, including parents of high school students, African-Americans, and Hispanics.

Responding to the Crisis in College Opportunity (January 2004, #04-1). This policy statement, developed by education policy experts at Lansdowne, Virginia, proposes short-term emergency measures and long-term priorities for governors and legislators to consider for funding higher education during the current lean budget years. *Responding to the Crisis* suggests that in 2004 the highest priority for state higher education budgets should be to protect college access and affordability for students and families.

With Diploma in Hand: Hispanic High School Seniors Talk About Their Future, by John Immerwahr (June 2003, #03-2). This report by Public Agenda explores some of the primary obstacles that many Hispanic students face in seeking higher education—barriers that suggest opportunities for creative public policy to improve college attendance and completion rates among Hispanics.

Purposes, Policies, Performance: Higher Education and the Fulfillment of a State's Public Agenda (February 2003, #03-1). This essay is drawn from discussions of higher education leaders and policy

officials at a roundtable convened in June 2002 at New Jersey City University on the relationship between public purposes, policies, and performance of American higher education.

Measuring Up 2002: The State-by-State Report Card for Higher Education (October 2002, #02-7). This report card, which updates the inaugural edition released in 2000, grades each state on its performance in five key areas of higher education. *Measuring Up 2002* also evaluates each state's progress in relation to its own results from 2000.

> ***Technical Guide Documenting Methodology, Indicators, and Data Sources for*** **Measuring Up 2002** (October 2002, #02-8).

State Policy and Community College–Baccalaureate Transfer, by Jane V. Wellman (July 2002, #02-6). This report recommends state policies to energize and improve higher education performance regarding transfers from community colleges to four-year institutions.

Fund for the Improvement of Postsecondary Education: The Early Years (June 2002, #02-5). The Fund for the Improvement of Postsecondary Education (FIPSE) attained remarkable success in funding innovative and enduring projects during its early years. This report, prepared by FIPSE's early program officers, describes how those results were achieved.

Losing Ground: A National Status Report on the Affordability of American Higher Education (May 2002, #02-3). This national status report documents the declining affordability of higher education for American families, and highlights public policies that support affordable higher education. It provides state-by-state summaries as well as national findings.

> ***The Affordability of Higher Education: A Review of Recent Survey Research***, by John Immerwahr (May 2002, #02-4). This review of recent surveys by Public Agenda confirms that Americans feel that rising college costs threaten to make higher education inaccessible for many people.

Coping with Recession: Public Policy, Economic Downturns, and Higher Education, by Patrick M. Callan (February 2002, #02-2). This report outlines the major policy considerations that states and institutions of higher education face during economic downturns.

Competition and Collaboration in California Higher Education, by Kathy Reeves Bracco and Patrick M. Callan (January 2002, #02-1). This report argues that the structure of California's state higher education system limits the system's capacity for collaboration.

Measuring Up 2000: The State-by-State Report Card for Higher Education (November 2000, #00-3). This first-of-its-kind report card grades each state on its performance in higher education. The report card also provides comprehensive profiles of each state and brief states-at-a-glance comparisons.

> ***Beneath the Surface: A Statistical Analysis of the Major Variables Associated with State Grades in*** **Measuring Up 2000**, by Alisa F. Cunningham and Jane V. Wellman (November 2001, #01-4). Using statistical analysis, this report explores the "drivers" that predict overall performance in *Measuring Up 2000*.
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> ***Supplementary Analysis for*** **Measuring Up 2000*: An Exploratory Report***, by Mario Martinez (November 2001, #01-3). This supplement explores the relationships within and among the performance categories in *Measuring Up 2000*.

***Some Next Steps for States: A Follow-up to* Measuring Up 2000**, by Dennis Jones and Karen Paulson (June 2001, #01-2). This report suggests a range of actions that states can take to bridge the gap between state performance identified in *Measuring Up 2000* and the formulation of effective policy to improve performance in higher education.

***A Review of Tests Performed on the Data in* Measuring Up 2000**, by Peter Ewell (June 2001, #01-1). This review describes the statistical testing performed on the data in *Measuring Up 2000* by the National Center for Higher Education Management Systems.

***Recent State Policy Initiatives in Education: A Supplement to* Measuring Up 2000**, by Aims C. McGuinness, Jr. (December 2000, #00-6). This supplement highlights education initiatives that states have adopted since 1997–98.

***Assessing Student Learning Outcomes: A Supplement to* Measuring Up 2000**, by Peter Ewell and Paula Ries (December 2000, #00-5). This report is a national survey of state efforts to assess student learning outcomes in higher education.

***Technical Guide Documenting Methodology, Indicators and Data Sources for* Measuring Up 2000** (November 2000, #00-4).

A State-by-State Report Card on Higher Education: Prospectus (March 2000, #00-1). This document summarizes the goals of the National Center's report-card project.

Great Expectations: How the Public and Parents—White, African-American, and Hispanic—View Higher Education, by John Immerwahr with Tony Foleno (May 2000, #00-2). This report by Public Agenda finds that Americans overwhelmingly see higher education as essential for success. Survey results are also available for the following states:

Great Expectations: How Pennsylvanians View Higher Education (May 2000, #00-2b).
Great Expectations: How Floridians View Higher Education (August 2000, #00-2c).
Great Expectations: How Coloradans View Higher Education (August 2000, #00-2d).
Great Expectations: How Californians View Higher Education (August 2000, #00-2e).
Great Expectations: How New Yorkers View Higher Education (October 2000, #00-2f).
Great Expectations: How Illinois Residents View Higher Education (October 2000, #00-2h).

State Spending for Higher Education in the Next Decade: The Battle to Sustain Current Support, by Harold A. Hovey (July 1999, #99-3). This fiscal forecast of state and local spending patterns finds that the vast majority of states will face significant fiscal deficits over the next eight years, which will in turn lead to increased scrutiny of higher education in almost all states, and to curtailed spending for public higher education in many states.

South Dakota: Developing Policy-Driven Change in Higher Education, by Mario Martinez (June 1999, #99-2). This report describes the processes for change in higher education that government, business, and higher education leaders are creating and implementing in South Dakota.

Taking Responsibility: Leaders' Expectations of Higher Education, by John Immerwahr (January 1999, #99-1). This paper reports the views of those most involved with decisionmaking about higher education, based on focus groups and a survey conducted by Public Agenda.

The Challenges and Opportunities Facing Higher Education: An Agenda for Policy Research, by Dennis Jones, Peter Ewell, and Aims McGuinness, Jr. (December 1998, #98-8). This report argues that due

to substantial changes in the landscape of postsecondary education, new state-level policy frameworks must be developed and implemented.

Higher Education Governance: Balancing Institutional and Market Influences, by Richard C. Richardson, Jr., Kathy Reeves Bracco, Patrick M. Callan, and Joni E. Finney (November 1998, #98-7). This publication describes the structural relationships that affect institutional effectiveness in higher education, and argues that state policy should strive for a balance between institutional and market forces.

Federal Tuition Tax Credits and State Higher Education Policy: A Guide for State Policy Makers, by Kristin D. Conklin (December 1998, #98-6). This report examines the implications of the federal income tax provisions for students and their families, and makes recommendations for state higher education policy.

The Challenges Facing California Higher Education: A Memorandum to the Next Governor of California, by David W. Breneman (September 1998, #98-5). This memorandum argues that California should develop a new Master Plan for Higher Education.

Tidal Wave II Revisited: A Review of Earlier Enrollment Projections for California Higher Education, by Gerald C. Hayward, David W. Breneman, and Leobardo F. Estrada (September 1998, #98-4). This review finds that earlier forecasts of a surge in higher education enrollments were accurate.

Organizing for Learning: The View from the Governor's Office, by James B. Hunt Jr., chair of the National Center for Public Policy and Higher Education, and former governor of North Carolina (June 1998, #98-3). This publication is an address to the American Association for Higher Education concerning opportunity in higher education.

The Price of Admission: The Growing Importance of Higher Education, by John Immerwahr (Spring 1998, #98-2). This report is a national survey of Americans' views on higher education, conducted and reported by Public Agenda.

Concept Paper: A National Center to Address Higher Education Policy, by Patrick M. Callan (March 1998, #98-1). This concept paper describes the purposes of the National Center for Public Policy and Higher Education.

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