

WASHINGTON'S FORGOTTEN MIDDLE-SKILL JOBS

MEETING THE DEMANDS
OF A 21ST-CENTURY ECONOMY



June 2008



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INTRODUCTION

Washington State has long enjoyed a reputation as a hotbed of innovation and excellence, with globally recognized businesses producing cutting edge technologies and high-value services. And our progress is attracting notice:

Washington ranked fifth in a recent Kauffman Foundation report about states best positioned to succeed in the new economy,¹ and Forbes.com recently listed Washington as one of their five “Best States for Business.”²

There’s no question that our highly skilled workforce has played a key role in our state’s growth and success in recent decades, and we have much to be proud of in terms of educational attainment. According to the 2000 census,³ Washington ranked tenth in the number of adults with at least a bachelor’s degree. Just as importantly, we ranked third in the number of adults with some postsecondary education or training. This latter figure is noteworthy because middle-skill jobs—those that require more than a high school diploma, but less than a four-year degree—make up the most significant segment of our total workforce, and will continue to do so for the foreseeable future.

However, we cannot rest on our laurels. **Washington is already beginning to experience shortages of the middle-skill workers that are so critical to our economic success, and businesses across the state are reporting the negative impact of these shortfalls on their productivity and growth.** To maintain our competitive edge in an increasingly competitive global economy, Washington must invest in both high- and middle-skill workers to ensure our businesses have the talent they need.

Washington has taken a vital first step in this direction. In 2007, the state authorized \$11.5 million per year for the Opportunity Grant program, which provides 45 credits or one year of free tuition, \$1,000 for books and supplies, and individualized support services for low-income individuals. Washington residents with a family income below 200 percent of the federal poverty level and pursuing approved high-wage, high-demand career pathways at one of the state’s 34 community and technical colleges are eligible. This program represents an important, forward-thinking investment in our economic security, providing both workers and businesses with access to needed skills.

We should build upon the promise of the Opportunity Grant program by expanding eligibility to all Washingtonians, effectively guaranteeing every resident one year of postsecondary education or job training. This would be an important first step in realizing the vision of the Skills2Compete-Washington campaign: guaranteed access to two years of postsecondary education for all Washington workers. As we discuss in this paper, there are precedents for resetting the bar for educational attainment, and there is strong evidence that such human capital investments yield substantial dividends for both workers and businesses. Establishing universal access to Opportunity Grants would go a long way toward ensuring that Washington State remains a global leader in the innovation economy.



WASHINGTON'S FORGOTTEN MIDDLE-SKILL JOBS

Conventional wisdom holds that our nation is headed for—or perhaps already experiencing—an “hourglass” or “dumbbell” economy: a bifurcated labor market with a small number of highly skilled, highly paid workers and a much larger number of low-skill, low-paid workers. Within such a model, middle-skill occupations—the jobs that fueled the expansion of the world’s largest economy and provided the foundation for a robust American middle class—are on the verge of extinction.

It’s a bleak picture, to be sure. It’s also a myth.

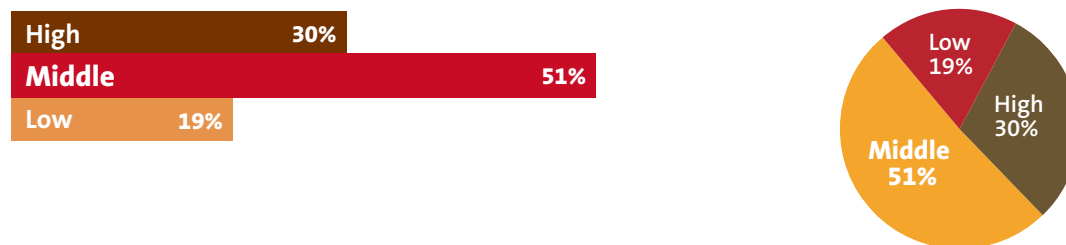
The truth is that **middle-skill jobs, which require more than a high school education but less than a four-year degree, currently make up the largest segment of jobs in our economy, and will continue to do so for years to come.** According to a recent report by economists Harry Holzer and Robert Lerman for the national Skills2Compete campaign, while middle-skill jobs have declined slightly as a portion of total employment, roughly half of all employment today is still in middle-skill occupations. And nearly half (about 45 percent) of all job openings between 2004 and 2014 will be at the middle-skill level. This compares with one-third of job openings in high-skill occupational categories and 22 percent in occupations requiring no more than a high school degree.⁴

This holds true in Washington State, as well. More than half of Washington jobs in 2006 were middle-skill jobs, representing nearly 1.4 million workers (Fig. 1). The demand for middle-skill workers in the state is expected to increase in the decade between 2004 and 2014, with close to 700,000 middle-skill job openings—comprising half of all job openings—expected during this time. This compares to low-skill jobs and high-skill jobs, which will account for 24 and 27 percent of openings respectively (Fig. 2, Table 2).

Despite these numbers, policymakers at both the federal and state levels have increasingly diverted attention and resources away from middle-skill jobs, and the education and training investments needed to ensure that workers have the skills they need to succeed in these vital occupations. This represents a lost opportunity to invest in our economic future.

Demand for Middle-Skill Jobs is Strong, Will Remain Strong in Washington

FIGURE 1. Washington Jobs by Skill Level, 2006



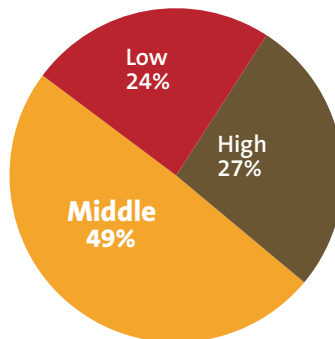
Source: Calculated by TWA from the Bureau of Labor Statistics website

TABLE 1. Washington Jobs by Skill Level, 2006

	Employment	Percent
Total, All Occupations	2,736,910	100.0%
Management	80,480	2.9%
Business & Financial	125,980	4.6%
Professional and Related	601,390	22.0%
Total, High-Skill	807,850	29.5%
Sales and Related	299,550	10.9%
Office and Administrative Support	457,550	16.7%
Construction	151,670	5.5%
Installation and Repair	113,700	4.2%
Production	168,350	6.2%
Transportation and Material Moving	206,540	7.5%
Total, Middle-Skill	1,397,360	51.1%
Service Occupations	515,920	18.9%
Farming/Fishing/Forestry Occupations	15,780	0.6%
Total, Low-Skill	531,700	19.4%

Source: Calculated by TWA from the Bureau of Labor Statistics website

FIGURE 2. Washington's Total Job Openings by Skill Level, 2004-2014



Source: Calculated by TWA from the Washington Workforce Explorer website

TABLE 2
Washington Jobs and Total Job Openings by Skill Level, 2004-2014

	Employment		Job Openings	
	2004	2014	Number	%
Total, All Occupations	3,109,953	3,690,023	1,388,800	100.0%
Management	103,339	122,108	40,235	2.9%
Business & Financial	138,686	162,493	51,015	3.7%
Professional and Related	676,608	818,595	281,635	20.3%
<i>Total, High-Skill</i>	<i>918,633</i>	<i>1,103,196</i>	<i>372,885</i>	<i>26.8%</i>
Sales and Related	333,313	388,025	169,815	12.2%
Office and Administrative Support	465,753	550,888	202,685	14.6%
Construction	187,287	243,743	98,365	7.1%
Installation and Repair	126,085	143,003	48,250	3.5%
Production	170,894	193,222	67,435	4.9%
Transportation and Material Moving	213,106	253,369	93,085	6.7%
<i>Total, Middle-Skill</i>	<i>1,496,438</i>	<i>1,772,250</i>	<i>679,635</i>	<i>48.9%</i>
Service Occupations	605,501	723,516	312,525	22.5%
Farming/Fishing/Forestry Occupations	89,381	91,061	23,755	1.7%
<i>Total, Low-Skill</i>	<i>694,882</i>	<i>814,577</i>	<i>336,280</i>	<i>24.2%</i>

Source: Calculated by TWA from the Washington Workforce Explorer website

HIGHLIGHT

Missing the Roots in the STEM

Policymakers have become increasingly concerned about U.S. global competitiveness in recent years, and a broad consensus has developed about the need for a strong science, technology, engineering, and math (STEM) workforce to support innovation industries and emerging technologies. In particular, business and political leaders have called for increasing the number of students receiving bachelor's or advanced degrees in these fields. The U.S. Congress responded in 2007 with the America COMPETES Act, which authorized \$42 billion in federal support for STEM research and education. These investments, along with those made at the state level, will be critical to ensuring that Washington remains a global leader in the innovation economy.

At the same time, employers are indicating that these highly skilled professionals aren't the only workers in short supply. A 2005 National Association of Manufacturers report found that while 35 percent of manufacturers anticipated a shortage of scientists and engineers, 80 percent—more than twice as many respondents—anticipated a shortage of skilled production workers, precisely the kind of middle-skill jobs that require more than high school, but less than a four-year degree.⁵ A truly comprehensive innovation agenda will address the demand for both highly educated innovation professionals and the middle-skill workers at the roots of a successful STEM strategy.



THE FACE OF WASHINGTON'S MIDDLE-SKILL JOBS

A middle-skill job requires education or training past high school, but not a four-year degree. But what do these jobs look like? It may be easier to call up a vision of low-skill jobs that require a high school diploma or less, or high-skill professional jobs that require four-year and advanced degrees.

But what kinds of skills, education, and training are most appropriate, in light of changes in the U.S. economy? Is the “information economy” resulting in rising demands only for workers with college and post-graduate education? Do the high and rising wage premiums for college-educated workers mean that education and training for jobs requiring less than four years of college are no longer worthwhile public investments?

In truth, our communities and state rely on middle-skill jobs. **Middle-skill workers are the police officers and fire fighters who keep us safe in our homes. They are the nurses, therapists and other medical technicians who keep us healthy. They are the air traffic controllers, electricians, and mechanics who keep our infrastructure up and running.** These are local, hands-on jobs, meaning they are unlikely to be outsourced to other countries.

Many of these are well-paid jobs, offering Washington workers a chance at economic security and prosperity. As illustrated in Table 3, these are jobs with good earning potential. Many offer median earnings that exceed the Washington overall median for 2006 of \$34,965.

Regional research supports the connection between many middle-skill jobs and good wages. A report from the Seattle Jobs Initiative (SJI) found that middle-wage jobs, defined as middle-skill jobs paying at least \$17/hr⁶ represent between 20 and 25 percent of all Puget Sound jobs. The report details several promising industry clusters targeted by regional economic development efforts and poised for varying degrees of middle-wage growth. Those areas of interest and corresponding forecasted middle-wage job growth include traditional industries such as construction and aerospace, expanding service sector industries of health care, and emerging sustainable industries like green building and clean technology.⁷

At the national level, the data tell a similar story. Between 1997 and 2005, American workers on the whole saw an overall real wage increase of 5 percent (adjusting for inflation). At the same time, many middle-skill occupations saw significantly higher wage increases. Of course, not all middle-skill occupations pay well or have meaningful advancement opportunities, confirming the fact that skills are sometimes only part of the economic success equation. But nationally, growth in demand for many middle-skill occupations has been fast enough to generate not only strong employment growth, but also rapid growth in wages.⁸

Thirty Middle-Skill Jobs Washington Can't Live Without

TABLE 3
Projected Washington Demand for 30 Middle-Skill Occupations, 2004-2014

	Employment		Net Change		Job Openings	Median Earnings 2006
	2004	2014	Number	%		
Computers						
Support Specialists	12,413	15,928	3,515	28.3	5,275	\$45,800
Specialists, Other	5,704	7,118	1,414	24.8	2,160	\$68,400
Construction						
Carpenters	39,836	52,841	13,005	32.6	20,735	\$44,400
Electricians	14,310	17,578	3,268	22.8	6,465	\$50,100
Painters	15,449	20,804	5,355	34.7	8,195	\$34,200
Operating Engineers	10,108	12,556	2,448	24.2	5,400	\$50,600
Plumbers	10,656	13,157	2,501	23.5	5,275	\$51,800
Healthcare						
Dental Hygienists	5,246	6,708	1,462	27.9	1,970	\$84,700
Licensed Practical Nurses	10,119	12,489	2,370	23.4	4,810	\$40,500
Medical Lab Technicians	2,416	3,037	621	25.7	1,350	\$34,800
Physical Therapy Assistants	1,116	1,458	342	30.6	555	\$41,700
Radiology Technicians	3,568	4,453	885	24.8	1,625	\$56,100
Registered Nurses	47,928	59,002	11,074	23.1	22,170	\$64,100
Respiratory Therapists	1,873	2,328	455	24.3	1,135	\$54,200
Surgical Technologists	1,470	1,827	357	24.3	570	\$41,200
Installation, Maintenance, and Repair						
Aircraft Mechanics	4,295	5,126	831	19.3	1,995	\$55,200
Auto Mechanics	14,395	15,679	1,284	8.9	5,265	\$39,800
Bus/Truck Mechanics	6,132	7,118	986	16.1	2,690	\$42,600
Heating and AC Installers	4,621	5,721	1,100	23.8	1,795	\$46,200
Heavy Equipment Mechanics	3,354	3,827	473	14.1	1,255	\$45,700
Industrial Machinery Mechanics	5,910	6,366	456	7.7	1,705	\$47,400
Transportation						
Air Traffic Controllers	801	885	84	10.5	205	\$104,000
Heavy Truck Driver	35,890	43,519	7,629	21.3	14,155	\$36,900
Public Safety						
Emergency Medical Technicians	2,626	3,215	589	22.4	920	\$36,900
Fire Fighters	6,196	6,934	738	11.9	2,635	\$55,200
Police Officers	7,661	8,569	908	11.9	2,995	\$59,200
Other						
Claims Adjusters	5,628	6,015	387	6.9	1,105	\$53,500
Legal Secretaries	4,501	5,054	553	12.3	1,460	\$39,400
Machinists	5,201	6,159	958	18.4	2,325	\$41,800
Paralegals	4,669	5,330	661	14.2	1,065	\$46,000

* 2006 median annual earnings for all occupations in Washington = \$34,965

Source: Projections data tabulated using the Washington Workforce Explorer website. Median Earnings data from America's Career Infonet website

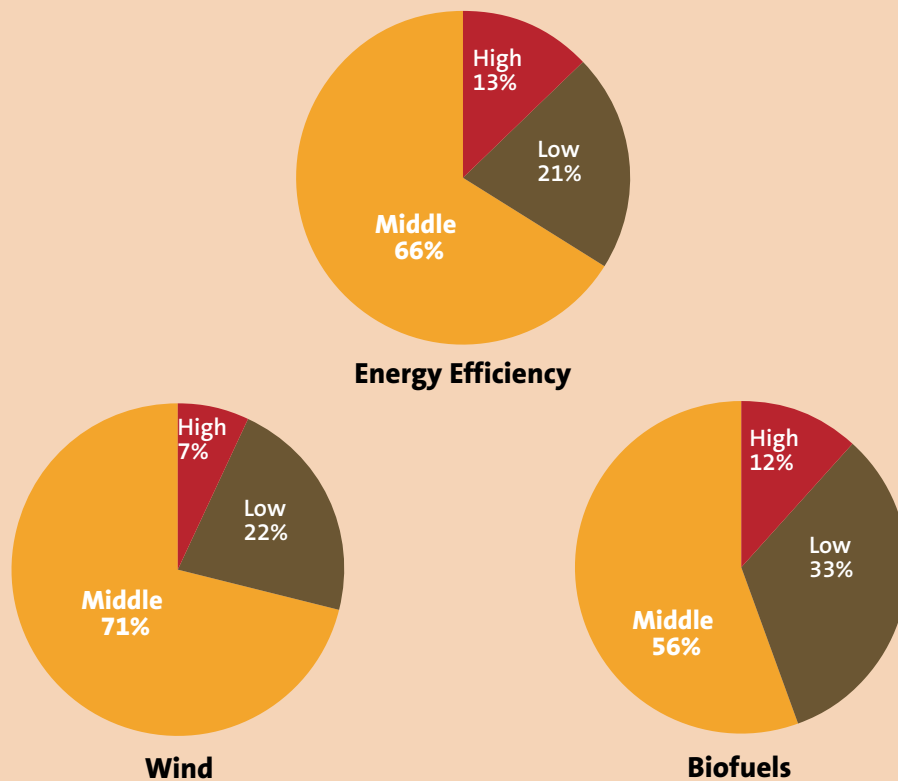
HIGHLIGHT

The Middle of the Green Revolution

More than ever before, policymakers and business leaders are paying attention to clean energy industries and technologies, which promise profound environmental and economic benefits for all Americans. A recent report by the Center on Wisconsin Strategy, the Apollo Alliance, and The Workforce Alliance indicates that the skills needed in the green economy closely mirror the middle-skill demands of the labor market as a whole. “Greener Pathways” examines emerging opportunities in the energy efficiency, wind, and biofuels sectors, and urges stakeholders to scale up green job training by leveraging existing state and local workforce development systems.

Green Jobs are Middle-Skill Jobs

FIGURE 3. U.S. Employment in Green Industries by Skill Level, 2004



Source: Tabulated by TWA from the US Bureau of Labor Statistics website.

Washington State is poised at the forefront of the green jobs movement. In 2008, the state legislature passed HB 6295, which directs the Washington Workforce Training and Education Coordinating Board to establish “green jobs” skills panels. The Workforce Development Council of Seattle-King County received a \$90,000 grant in 2007 to establish a Construction, Green Design and Green Building Skill Panel. These investments are already providing dividends for Washington workers, employers, and communities.

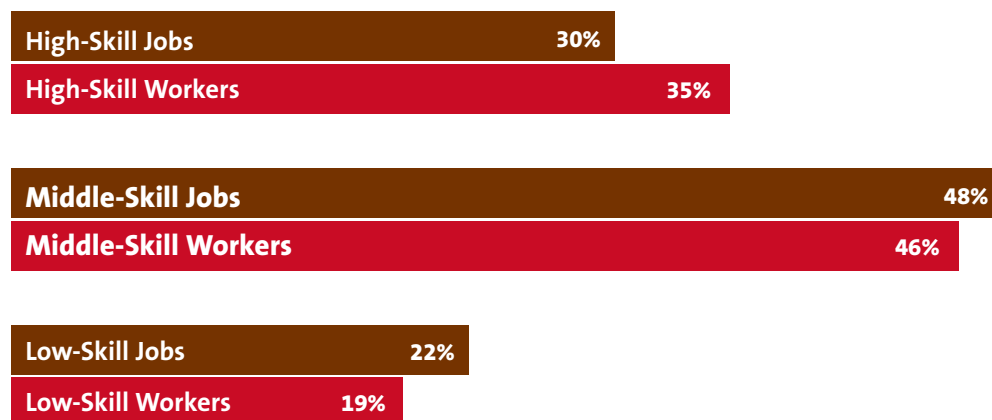


WASHINGTON'S MIDDLE-SKILL GAP TODAY AND TOMORROW

If middle-skill jobs are going to comprise the main portion of employment and worker-generated economic activity in our state, then Washington's economic future is dependent in part on ensuring an adequate source of skilled workers to fill those positions. Unfortunately, with the dramatic decreases in support for middle-skill training in this country—and the accelerating retirement of middle-skill workers—the supply of such workers is not meeting current demand in states throughout the U.S. Here in Washington, 48 percent of all jobs are classified as middle-skill, but only 46 percent of Washington workers likely have the education and training required to fill these positions. In reality, the gap is likely even greater in particular industries because many workers trained to the middle-skill level may not have the right skills for particular jobs. This means that thousands of well-paid and rewarding jobs are already going unfilled in our state today, in industries that are and will be essential to Washington's economic portfolio.

Washington's Skills Mismatch: A Middle-Skill Gap?

FIGURE 4. Washington Jobs and Workers by Skill Level, 2004



Sources: Washington State Employment Security Department & US Bureau of the Census

State-level employer surveys confirm that Washington's primary skill shortage is at the middle-skill level. A 2005 survey by the Washington Workforce Training and Education Coordinating Board (WTB) found that a greater number of employers were experiencing worker shortages at the middle-skill level than at the high-skill level.

The survey found that 18,900 employers had difficulty finding applicants with vocational certificates, 17,800 had trouble finding applicants with vocational associate's degrees, and over 22,000 were challenged to find one or the other of these vocational credentials.⁹ By contrast, fewer than 14,000 employers experienced difficulty finding employees with baccalaureate degrees, and fewer than 4,000 employers expressed any difficulty finding workers with professional or doctoral degrees.

Nearly a quarter of Washington employers had difficulty locating employees with occupation-specific skills. The WTB estimates that Washington is supplying only 83 percent of employer needs through public and private career and technical schools and apprenticeship programs, precisely the types of programs and institutions that can provide focused occupational training and education.

These shortages of middle-skill workers are particularly acute in certain Washington industries like healthcare, construction, and logistics and international trade. Ninety-five percent of Washington state hospitals (100 percent of urban hospitals) reported it was somewhat or very difficult to find trained radiology technologists. Seventy-seven percent (85 percent of urban hospitals) reported it was somewhat or very difficult to recruit licensed practical nurses. In another survey, Washington state hospitals were experiencing a ten percent vacancy rate for registered nurses and a nine percent vacancy rate for medical laboratory personnel.¹⁰

The economic impact of skilled worker shortages is real. According to the WTB study, **seventeen percent of Washington employers reported that the difficulty finding qualified job applicants lowered output or sales, sixteen percent said it lowered productivity, and fourteen percent reported it reduced quality.**¹¹ But for industries like healthcare, the costs of the skills gap go beyond financial. The health and safety of our state's residents are put at risk. According to the Health Workforce Institute, 55 percent of hospitals in Washington had to divert ambulances from their emergency rooms because of shortages of registered nursing staff. The Institute also reported that hospitals are delaying surgeries because not enough workers are available to care for post-operative patients.

Washington Educational Projections: A Widening Middle-Skill Gap

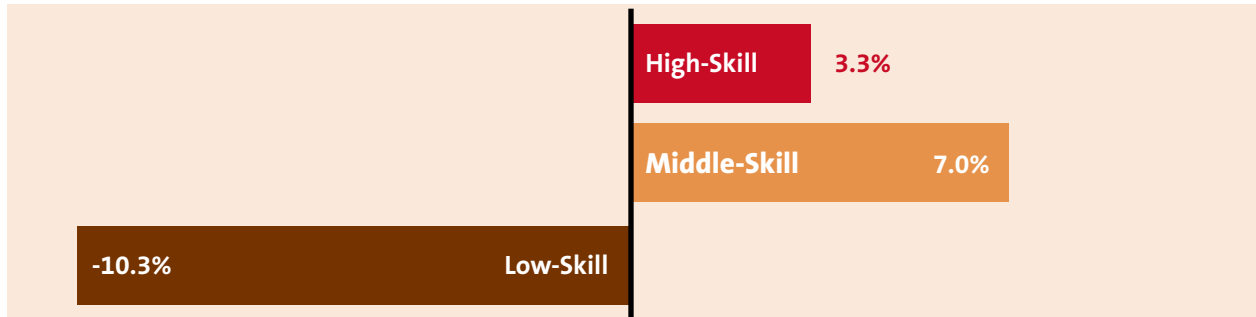
Washington educational projections (Figs. 5 and 6) suggest that the shortage of workers to fill middle-skill jobs is likely to worsen. During the fifteen years between 1989 and 2004, the state saw a growth in residents with educational attainment at the high- and middle-skill levels and a decrease in those at the low-skill level. But the state will see a significant change in these trends over the subsequent fifteen years, when the proportion of low-skill workers in Washington's workforce is likely to increase at the same time that the percentage of middle-skill workers is projected to decline. This trend is due in part to the aging out of middle-skill, blue-collar workers who are less likely to delay retirement than high-skill, white-collar workers. Immigration trends are likely to do little to offset middle-skill attrition, as most workforce growth in the state due to in-migration will likely occur at the low-end of the skill spectrum or at the high-end of the skill spectrum (for example, engineers brought in from overseas through H-1B visas).

These educational, retirement, and immigration trends, if not addressed, will only exacerbate the mismatch between the skill needs of Washington businesses and the state's available workforce, stifling economic growth and limiting opportunity for thousands of Washingtonians to advance within the state's economy.

To offset these trends, Washington State must continue to take the type of proactive policy action needed to align its workforce and education resources to better meet the state's labor market demand. This will have to include devoting adequate resources to prepare many more Washingtonians at the low-skill level for middle-skill jobs.

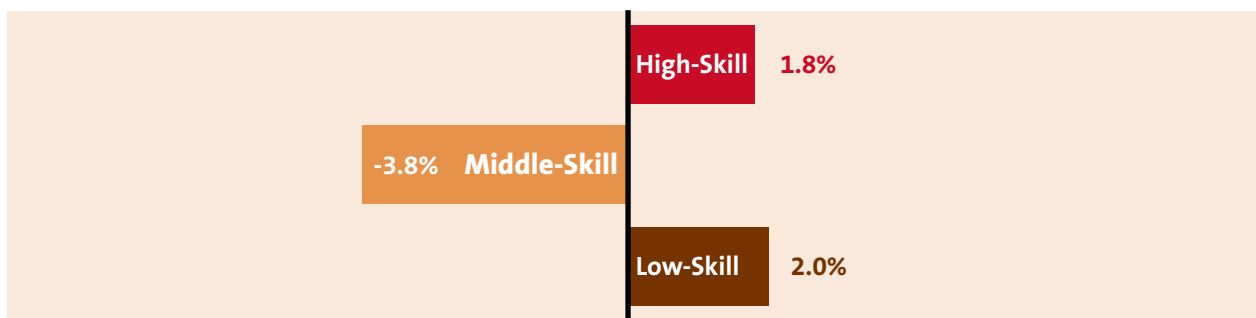
A Widening Middle-Skill Gap: Washington Educational Attainment Today and Tomorrow

FIGURE 5. Percentage Change in Washington Educational Attainment, 1989-2004



Source: Calculated by TWA using December 1989 and 2004 CPS data

FIGURE 6. Projected Percentage Change in Washington Educational Attainment 2004-2020



Source: Current attainment calculated by TWA using December 2004 CPS data. 2020 attainment projected by TWA using demographic data from the December 2005 CPS data and population projections calculated by The Office of Financial Management, State of Washington

TABLE 4
Actual and Projected Change in Washington Educational Attainment, 1989 - 2020

	1989	2004	2020	Change 1989-2004	Change 2004-2020
Low-Skill	30.6%	20.3%	22.3%	-10.3%	2.0%
Middle-Skill	39.2%	46.2%	42.4%	7.0%	-3.8%
High-Skill	30.2%	33.5%	35.3%	3.3%	1.8%
Low-Skill	749,975	656,421	895,163	-93,555	238,742
Middle-Skill	960,753	1,493,923	1,702,013	533,170	208,090
High-Skill	740,172	1,083,256	1,417,006	343,084	333,750
Total	2,450,900	3,233,600	4,014,182	782,700	780,582

Sources: Washington State Employment Security Department & US Bureau of the Census

HIGHLIGHT
AN EVEN GREATER BASIC SKILLS CRISIS?

As Holzer and Lerman point out in “America’s Forgotten Middle-Skill Jobs,” the data supporting education demand projections likely underplays the need for more broadly based basic skills education. The authors note that despite the increases in U.S. educational attainment over the last twenty years, the National Assessment of Adult Literacy (NAAL) indicates only a slight increase in quantitative skills between 1992 and 2003, and no improvement at all for prose and document literacy.

Literacy rates for African-American and Asian-American adults rose during that time frame, but declined for Hispanic adults and remained flat for non-Hispanic whites. African-American and Hispanic workers, the two groups with lower than average literacy levels, are expected to account for 64 percent of total workforce growth in the United States between 2000 and 2020, meaning that overall skill composition of the workforce may not increase significantly even with a rise in educational attainment levels.



CLOSING THE GAP

The Face of Middle-Skill Education and Training

There are a number of vocationally focused education and training programs in Washington that can help close the state's middle-skill gap. Unlike education for high-skill jobs, which involves college or post-graduate degrees, education for middle-skill jobs can come in many different forms—for example, occupational certifications, associate's degrees, apprenticeship certifications—and in many different settings, including community colleges, community based training organizations, and workplaces.

An associate's degree allows students to enter the workforce immediately upon completion of the degree. Associate's degrees are generally required for occupations such as registered nurse, radiation therapist, and computer specialists. Vocational certificates lead to certification of the knowledge and skills needed to perform the duties of a given occupation, according to regulations or nationally accredited standards. They generally require less classroom time than associate's degrees, offering a path for individuals to develop and verify specific skills sets. They are also extremely useful for individuals already in the workplace as a means of reinforcing existing skills sets and acquiring new skills. Examples of jobs where a vocational certificate could be valuable include dental and legal assistants, auto mechanics, and fire fighters.

Apprenticeships are supervised employment programs that combine classroom instruction and on-the-job training. Generally offered directly by employers or through labor/management partnerships, apprenticeships are usually required for a high-demand career as an electrician, aircraft mechanic, or plumber.

For workers whose basic skills are not at a level that allows them to enter these types of education and training programs, there are program options that teach English and basic reading and math skills in the context of occupational skills. These programs often connect to a specific job that is on a defined career ladder or else to further education that results in a middle-skill credential.

Washington has a number of exemplary middle-skill education and training opportunities that can serve diverse populations. These are just a few examples:

- ◆ A worker whose job has gone abroad can find re-training for in-demand middle-skill jobs like welding, construction, and automotive maintenance in short-term training programs offered by the community-based Seattle Jobs Initiative in partnership with local community colleges.
- ◆ Individuals facing employment barriers who are seeking a job with benefits and family supporting wages can establish careers in the skilled trades and succeed in apprenticeships through the Apprenticeship Opportunities Project (AOP), a not-for-profit community program.
- ◆ A young person graduating from high school and looking for a rewarding career or an adult professional looking for a career change can earn an associate's degree in a Clinical Laboratory Technologist or Medical Laboratory Technologist training program at Shoreline Community College in Seattle, Clover Park Technical College in Tacoma, or Wenatchee Valley College in Wenatchee.
- ◆ A current worker in the airport industry can find the training needed for advancement at Airport University, a partnership between South Seattle Community College and Port Jobs. Airport University transforms the workplace into a college by offering practical, credit-bearing courses with content, locations and times that fit student and employer needs.

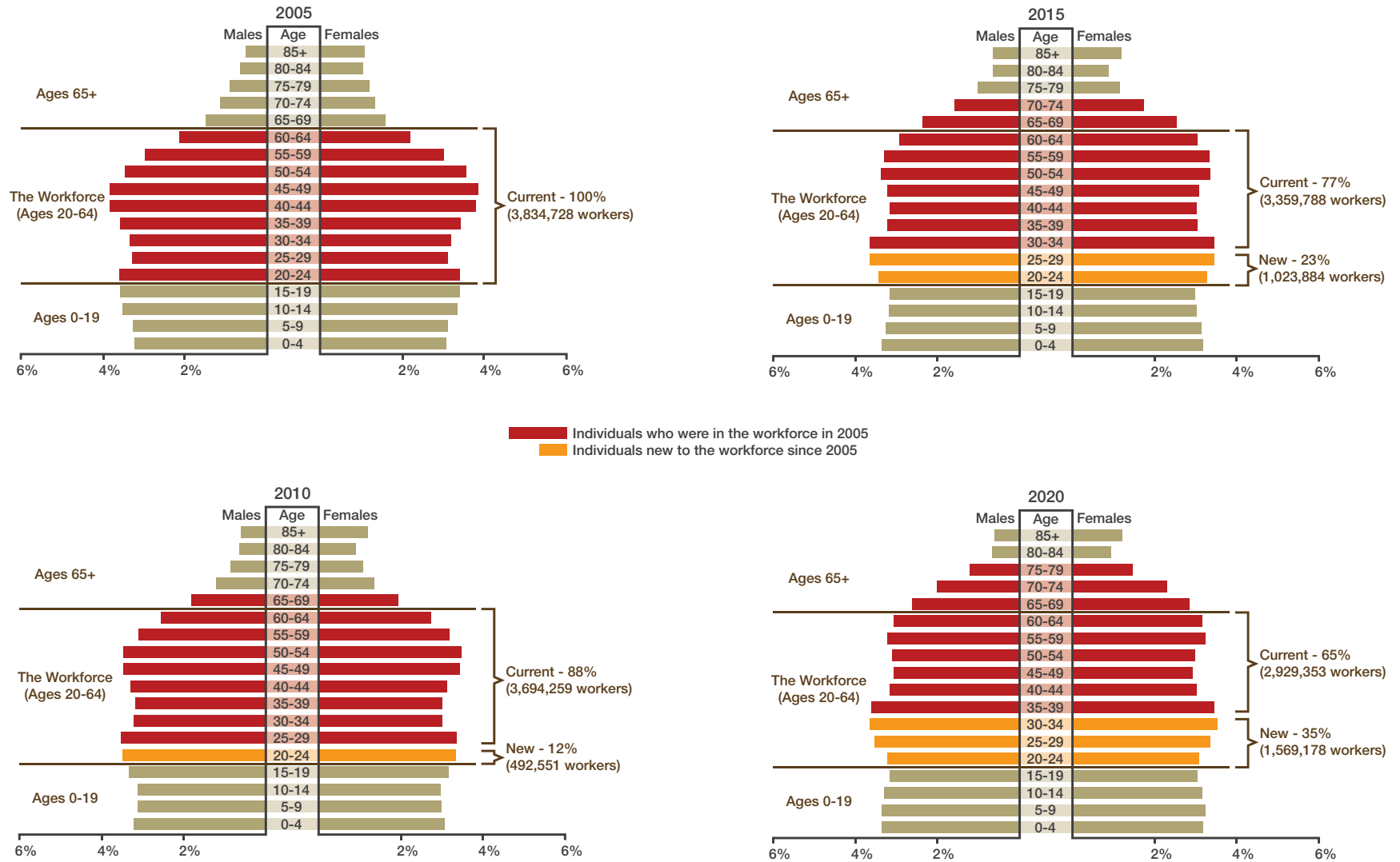
Understanding Washington's Future Workforce

Clearly, Washington has a number of options for training people for middle-skill jobs. But in order to reverse the growing middle-skill gap in our state, we must expand access to these programs with a full understanding of the composition of our future workforce. Currently, the majority of public postsecondary education and training resources are devoted to a comparatively small number of young people under the age of 25 who, ultimately, will comprise a minor portion of our state's workforce for the coming decades. In fact, **two-thirds of the people who will be in Washington's workforce in the year 2020 were already working adults—that is, long past the traditional high school-to-college pipeline—in 2005.**

If Washington is going to address the skill gaps on its horizon, we cannot focus education strategies solely on those future workers coming out of high school. We will need to look at how those adults currently in the workforce—who could benefit significantly from new investments in education and training—can become part of the solution to the middle-skill gap facing our state today and in the years ahead.

Washington's Workforce of Tomorrow is in the Workforce Today

FIGURE 7. Current Working Age Washington Adults in the Current and Projected Population, 2005- 2020



Source: Calculated by TWA using population projections from The Office of Financial Management, State of Washington

Overcoming Barriers to Training Washington’s Future Workforce

What does it mean that the majority of our state’s future workers are adults who are already in the workforce? It means that public policies must align to reduce the particular barriers that face adult workers trying to access the education and training needed for middle-skill jobs. The cost of tuition for education and training programs is often the single most significant barrier to access for Washington workers. Therefore, **expanding access to tuition assistance is a crucial first step in reversing the state’s growing middle-skill gap. But there are other challenges for Washingtonians trying to access the training needed for in-demand middle-skill jobs.**

Postsecondary education and training—and the financial aid supporting adult participants—must be flexible enough to accommodate the schedules of working Washingtonians. In the 1999-2000 academic year, more than half of undergraduates at public two-year institutions worked full-time.¹² In 2004, the number of Washington adults aged 25-44 who were enrolled part-time in undergraduate programs equaled almost 38 percent of the state’s total undergraduate population.¹³ Working adults’ schedules can be accommodated in a number of ways, including by expanding financial aid eligibility for part-time and less-than-part-time attendance, scheduling classes that meet at convenient times (such as on weekends and in the evenings), and by making courses available through distance learning and other technologies that allow remote or self-paced instruction.

Lack of understanding of how to access, afford, and navigate postsecondary education and training systems—particularly for first-generation students—represents another significant challenge. A 2006 study by the Washington State Workforce Training and Education Coordinating Board (WTB) found that lack of information about training opportunities and financial aid posed a significant barrier to student access to, and retention in, workforce education and training.¹⁴

In addition, access to supportive services, such as transportation, tutoring, career counseling, mentoring, and child care, increase the likelihood that Washington’s workers can succeed in their chosen middle-skill training programs. According to the WTB study, 97 percent of Washington community and technical college staff believe that providing support services such as child care, transportation assistance, career counseling, academic advising, and assistance with obtaining financial aid would result in increased student success. Additionally, 48 percent of potential participants in education and training programs said child care would help them get into a community college program and 47 percent said transportation would help.¹⁵

Other barriers to access can result from the absence of a coordinated training system that allows for the transferability of the previous work and education experience that many adult workers already possess. Work experience is seldom regarded as fulfilling prerequisites, and individuals may have to take basic courses in subjects they already know intimately—or retake basic courses they previously took because a different college had a different requirement.

Washington has taken some important steps in reducing these financial and structural barriers that restrict access to education and training for working adults. But the realities of the 21st-century labor market will require even greater strides and a big-picture vision for change.

A 21st-Century Skill Guarantee

If we are to realize our state’s full economic potential, educational access must reflect the demands of a 21st-century economy and the realities of the 21st-century workforce. Given that the largest portion of Washington jobs are at the middle-skill level and the majority of future workers are already in the workforce today, the Skills2Compete-Washington campaign supports the following vision for our state:

Every working Washingtonian should have access to the equivalent of at least two years of education or training past high school—leading to a vocational credential, industry certification, or one's first two years of college—to be pursued at whatever point and pace makes sense for individual workers and industries. Every person must also have access to the basic skills needed to pursue such education.

It's an ambitious goal, but not an unprecedented one. Throughout our nation's history, federal and state policymakers have elevated educational guarantees to meet the changing skill requirements brought on by economic and technological change. And, indeed, leaders in Washington have already taken some steps to address similar challenges here in the 21st century. But there is more to be done.

Historical Precedents

As the nation transitioned from an agricultural economy to an industrial economy in the mid-nineteenth century, policymakers across the United States realized that a broader skill set was required from a much greater segment of the population. This was one important factor in the development of the high school movement to provide a free public education to all citizens. Between 1910 and 1930, the proportion of seventeen-year-olds in secondary education increased from less than 9 percent to 30 percent, fueling the expansion of America's great cities and industries. By the late 1990s, nearly 70 percent of U.S. students were graduating with a high school diploma. Universal secondary education is now understood as one of the fundamental guarantees our society makes to its citizens.

By the middle of the 20th century, society realized that postsecondary education and training would allow the United States to flourish. This was the atmosphere in which the GI Bill was passed in 1944. Between 1944 and 1956, nearly 8 million returning servicemen and servicewomen used the GI Bill. People pursuing four-year college degrees accounted for about a quarter (2.2 million) of those benefiting from the program. But **a much larger—and typically forgotten—number of GIs pursued what we would today recognize as middle-skill training, with 3.5 million enrolled in business or trade school, 1.4 million receiving publicly funded on-the-job training, and nearly 700,000 receiving farm training.** As such, a broad-based investment in middle skills was a big part of our country's post-war prosperity.

State Skill Guarantees

Unfortunately, more recent federal investments in postsecondary education and job training have been in decline. But some forward-thinking states have been making vital commitments to the skills and economic security of their citizens, recognizing that a new minimum level of skills and education should be made available to state residents.

For example, the Georgia HOPE Grant program, funded with lottery proceeds, pays tuition, fees, and up to \$300 for books for Georgia residents to earn a certificate or diploma (at the sub-AA level) approved by the state Department of Technical and Adult Education (or a comparable program of study approved by the Board of Regents) in a public technical college or public college or university. The HOPE Grant program does not have income- or merit-based criteria for eligibility (although recipients must make satisfactory academic progress while receiving it) and allows part-time attendance. According to the state Department of Technical and Adult Education, enrollment in public technical colleges has increased by 110 percent since the HOPE program began.

In 2007, Michigan Governor Jennifer Granholm announced the creation of the No Worker Left Behind program in her State of the State address. The goal of the program, officially launched in August 2007, pays tuition of up to \$5,000 per year for two years for 100,000 Michigan workers to pursue a degree or certificate at a community college, university, or other approved training program in a high-demand occupation (determined on a regional basis). The state reprogrammed \$40 million in federal funds—primarily from the Workforce Investment Act and Trade Adjustment Assistance programs—to support the initiative. The separate Michigan Promise program guarantees every new high school graduate a \$4,000 scholarship for completing two years of postsecondary education at an eligible state institution.

Here in Washington, the state legislature in 2007 authorized \$11.5 million per year for the Opportunity Grant program, which covers tuition for up to 45 academic credits at any state technical or community college, and up to \$1,000 per year for books and supplies. Any Washington resident student with a family income at or below 200 percent of the federal poverty level is eligible to participate in the program.

The Opportunity Grant model has been carefully constructed to help nontraditional students advance into high-demand, high-wage job opportunities. Opportunity Grants can be used toward completion of credentials, certificates, and apprenticeship programs in occupations where local and regional employer demand exceeds the supply of qualified applicants. Eligible programs must be linked to educational and career pathways, and colleges must demonstrate that there are jobs available for program graduates that pay at least \$13 per hour. In addition, schools must demonstrate that local businesses, labor groups, and other community stakeholders are active in supporting the creation or expansion of the program.

The program has already demonstrated results. In the 2006 pilot program, which included eleven Washington community and technical colleges, more than 800 low-income students with an average household income of less than \$12,000 used the program. Sixty-three percent of program participants were working parents juggling family and career. 73 percent of pilot program participants were retained for an entire academic year, or successfully completed their course of study.¹⁶

While the current program is limited to one-year of study for low-income individuals, state policymakers should consider expanding access to the program to meet the growing demand for middle-skill workers. **Guaranteeing access to the Opportunity Grant for one year to all Washington residents would be a vital first step** toward realizing the vision of the Skills2Compete-Washington campaign: guaranteed access to two years of postsecondary education or training so that all Washington citizens can upgrade their skills to meet the rapidly changing demands of a highly competitive global economy.

The Benefits and Returns of a 21st-Century Skill Guarantee

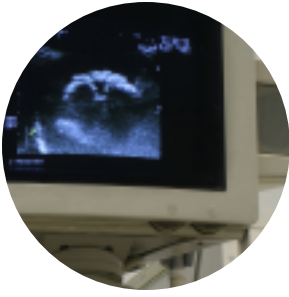
Anyone who doubts the value of guaranteeing up to two years of postsecondary education or training needs only to look at the evidence. A recent study of Washington state community and technical college students found that those who reached a “tipping point”—completing the equivalent of two semesters of postsecondary education and earning a credential or certificate—gained significant earning advantages over those who did not reach this threshold.¹⁷ For example, students who started in adult basic education or GED courses and reached the tipping point earned an average of \$8,500 more per year than students who completed fewer than 10 credits over the same time period.

These findings are consistent with those of Holzer and Lerman who found that the median worker with an associate’s degree earned about 33 percent more than a worker with only a high

school degree, while workers with a bachelor's degree earned about 62 percent more than workers with only a high school degree.¹⁸ These studies indicate not just that postsecondary education provides a significant earnings advantage for workers, but also that the per-year benefits for workers receiving a two-year degree are comparable to those receiving a four-year degree.

A guarantee of access to middle-skill education for all workers would increase productivity and earnings in Washington. According to the Organization for Economic Co-operation and Development (OECD), each year of postsecondary education leads to an increased per capita output of between 4 and 7 percent.¹⁹ Increasing the average total schooling of a city's population by two years increases the wages of all workers by about 6 percent, regardless of individual educational attainment.²⁰ And one additional year of schooling leads to an 8.5 percent increase in productivity in the manufacturing sector, and more than a 12 percent productivity increase in other industrial sectors.²¹

A 21st-century skill guarantee for all Washington workers would also increase public resources. Increasing the number of U.S. adults with more than a high school diploma but less than a baccalaureate degree by 10 percent would increase federal tax revenue by \$14 billion,²² and would save the federal government up to \$2,500 per person in reduced reliance on public assistance programs.²³



CONCLUSION

Rumors of the demise of middle-skill jobs have been greatly exaggerated, and middle-skill workers will continue to serve as the backbone of our state economy for years to come. They will continue to repair our roads and bridges, care for our elderly, transport goods, keep our communities safe, and a host of other services that we rely on daily. But without sufficient education and training opportunities, our businesses and communities will continue to suffer from a lack of qualified workers, and too many low-income Washingtonians will not have access to the many middle-skill jobs that are going unfilled.

While Washington has taken some important steps in addressing the growing shortage of middle-skill workers, **it is time for a bold, visionary step that will ensure our place in a 21st-century economy.** At various times in our nation's history, we have adjusted the basic level of education guaranteed to all Americans as a way to adjust to a changing economy and remain competitive. Universal high school and the GI Bill are examples of when we did this with great success in the past. It's time to do it again by guaranteeing that all Washington residents have access to training for jobs at the middle-skill level.

A two-year skill guarantee for all—beginning with expansion of the Washington Opportunity Grant program to include all residents and eventually adopting other complementary policies that eliminate barriers to training for working adults—would ensure that Washington remains at the forefront of the innovation economy.

APPENDIX: METHODOLOGY

Table 1 and Figure 1: Data from the Bureau of Labor Statistics.²⁴ Occupational categories (high, middle, low skill) based on the methodology used in Holzer and Lerman, 2007.²⁵

Table 2 and Figure 2: Based on occupational projections for 2004-2014 by Washington Employment Security Department.²⁶ Occupational categories (high, middle, low skill) based on the methodology used in Holzer and Lerman, 2007.

Figure 3: Data from the Bureau of Labor Statistics (BLS).²⁷ Occupations divided into skill levels (high, middle, low) based on educational attainment requirements as defined by BLS. Because BLS does not classify occupations as green jobs, this section of the report assumes that the skills distribution in green jobs is the same as the skills distribution that occurs across all related occupations.

Table 3: Based on occupational projections for 2004-14 by Washington Employment Security Department, using recategorization of occupations according to BLS Education and Training Categories.²⁸ Jobs requiring at least moderate-term on-the-job training, related work experience, a postsecondary vocational award, or an associate's degree were classified as middle-skill.

Figure 4: Based on occupational projections for 2004-2014 by the Washington Employment Security Department, and 2004 American Community Survey (ACS) data on educational attainment by state.²⁹ Occupational categories (high, middle, low skill) based on the methodology used in Holzer and Lerman, 2007. Only workers in the labor market and at least 25 years of age (i.e., past traditional school age) are counted.

Figures 5 and 6, and Table 4: Based on Current Population Survey (CPS) data for 1989, 2004, and 2005³⁰ along with population projection data and labor force estimates³² by the Office of Financial Management and the Employment Security Department of Washington State.

1989, 2004 and 2020 Educational Attainment: Past years educational attainment data reported only for workers in labor force and aged 25 and over, using CPS data. 2020 projections calculated using static educational attainment model presented in Hanak and Baldasarre, 2005.³³ In that model, educational attainment figures are calculated for the state's current workers (workers aged 25-49 in 2005) for each of 12 different race, ethnicity, gender and age cohorts. Educational attainment for these cohorts is assumed to be static over the ensuing 15 years (2020), and educational attainment for new cohorts of workers (ie, younger than 25 years in 2005) is assumed to mirror that of similar age-race-gender groups today. As such, changing educational attainment throughout the state's population is calculated based on projected demographic changes in the composition of the working population, and does not take into account possible changes in behavior, immigration, et.al.

Creating Skill Categories Using Educational Attainment Data: Skill attainment categories (high, middle, low) for 1989 created using a reclassification of CPS-reported "grades completed" that parallels the educational attainment categories later used by CPS, and reclassified in this table for current and future years using the same method as in Figure 4, p. 11.

Figure 7: Data from long-term population projections (2005 to 2020) by age and gender cohorts, as calculated by the Office of Financial Management of the State of Washington.³⁴ Each cohort was either classified as a "current working age adult" or "not a current working age adult" based solely on age. Current working age was defined as ages 20 to 64.

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