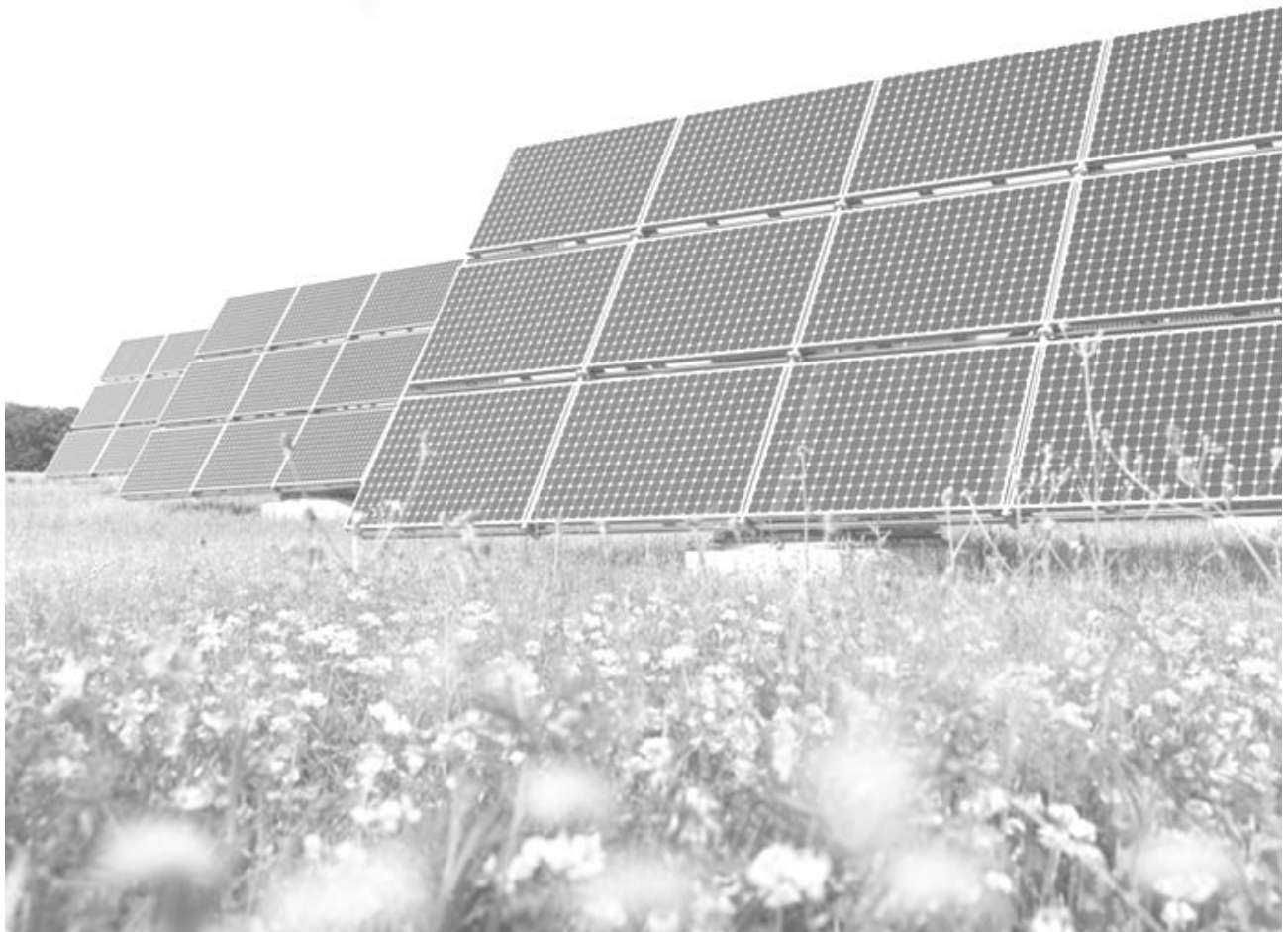


# **Chapter VI: Public Benefits of Higher Education**





**Higher education opens the door to more jobs in today’s economy**

The number of jobs requiring higher levels of education has increased substantially, both nationally and in Washington. According to a recent report by the Bureau of Labor Statistics,<sup>1</sup> all employment growth in the nation over the last two decades has been among workers with at least some college experience, or a college degree or certificate.

While factors other than education undoubtedly impact the number of jobs a state may lose during a recession, evidence suggests that states with more highly educated populations tend to lose fewer jobs than those with less-educated populations.

Washington’s economy serves as a magnet for workers with higher levels of education. Demand for these workers has remained far more stable during the recession than demand for less highly educated workers.

For example, the table below shows that Washington job growth occurred at all training levels in the pre-recession years of 2006 and 2007. However, during the recession years of 2008 and 2009, jobs declined in all education categories, except those requiring bachelor’s degrees, which rose nearly one percent.<sup>2</sup>

**Changes in Washington State Employment by Education Requirements**

Education Level	Percent Change from 2006 to 2007	Percent Change from 2007 to 2008	Percent Change from 2008 to 2009	Average Annual Change from 2006 to 2009
Less than High School	2.8%	-0.5%	-6.0%	-1.2%
High School Diploma/GED	0.8%	-0.3%	-4.9%	-1.4%
Sub-Bacc. Credential	1.6%	1.8%	-3.8%	-0.1%
Bachelor’s Degree	1.9%	4.4%	0.8%	2.4%
Graduate/Professional Degree	0.7%	1.1%	-2.5%	-0.2%

Note: Data does not include self-employment.

Source: Second Quarter OES Survey Data, Washington Employment Security Department, LMEA Division.

<sup>1</sup> U.S. Bureau of Labor Statistics, “Spotlight on Statistics: Back to College,” 2010. <http://www.bls.gov/spotlight/2010/college/home.htm>

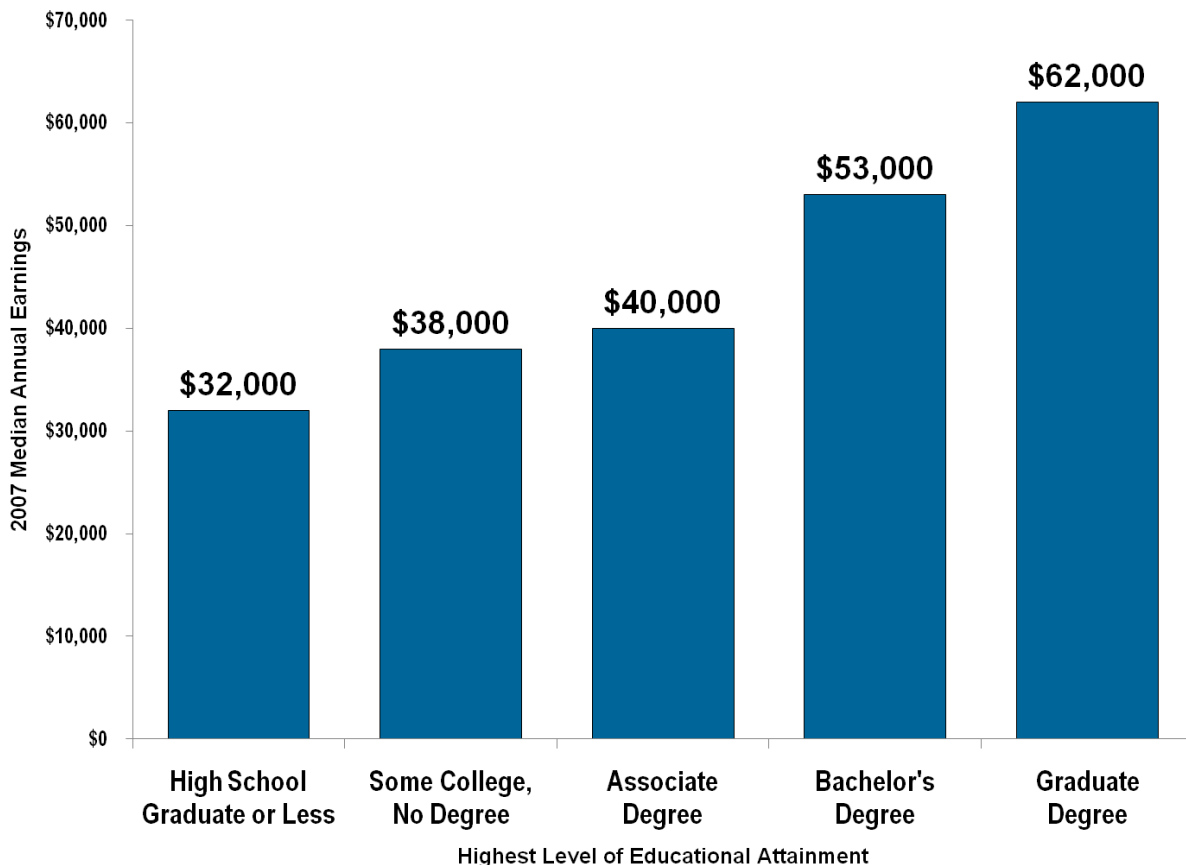
<sup>2</sup> Lederer, John. *Job Growth: Why Increasing Educational Attainment is so Important for Creating Jobs*, Higher Education Coordinating Board (October 2010), [www.hecb.wa.gov/documents/ResearchBriefonJobGrowth-RevisedFinal.pdf](http://www.hecb.wa.gov/documents/ResearchBriefonJobGrowth-RevisedFinal.pdf).

### Increased educational attainment boosts family earning power

Individuals have strong financial incentives to earn college degrees and certificates. The state's Employment Security Department has found that wages tend to grow with the level of education required to fill positions. In an analysis of job vacancies in the spring of 2010, positions requiring a high school diploma paid \$10.20 per hour, while those requiring a bachelor's degree paid \$25.74 per hour.<sup>3</sup>

Research suggests that increasing the number of educated workers even leads to financial benefits for people who have not attained higher levels of education. One study found that a 1 percent increase in the proportion of the population holding four-year college degrees led to a 1.9 percent increase in the wages of workers without high school diplomas and a 1.6 percent wage increase for high school graduates.<sup>4</sup>

**Median Annual Earnings by Educational Attainment,  
Ages 25-64**



Source: Washington State Population Survey, 2008.

<sup>3</sup> Washington State Job Vacancy Survey Report, Washington State Employment Security Department (July 2010).

<sup>4</sup> Moretti, E. (2004). Estimating the social return to higher education: Evidence from longitudinal and repeated cross-section data. *Journal of Econometrics*, 121. pp. 175-212. Retrieved from <http://www.econ.berkeley.edu/~moretti/socret.pdf>.

### Academic research generates new businesses for Washington's economy

Academic research conducted primarily at the University of Washington and Washington State University impacts the state economy in two ways.

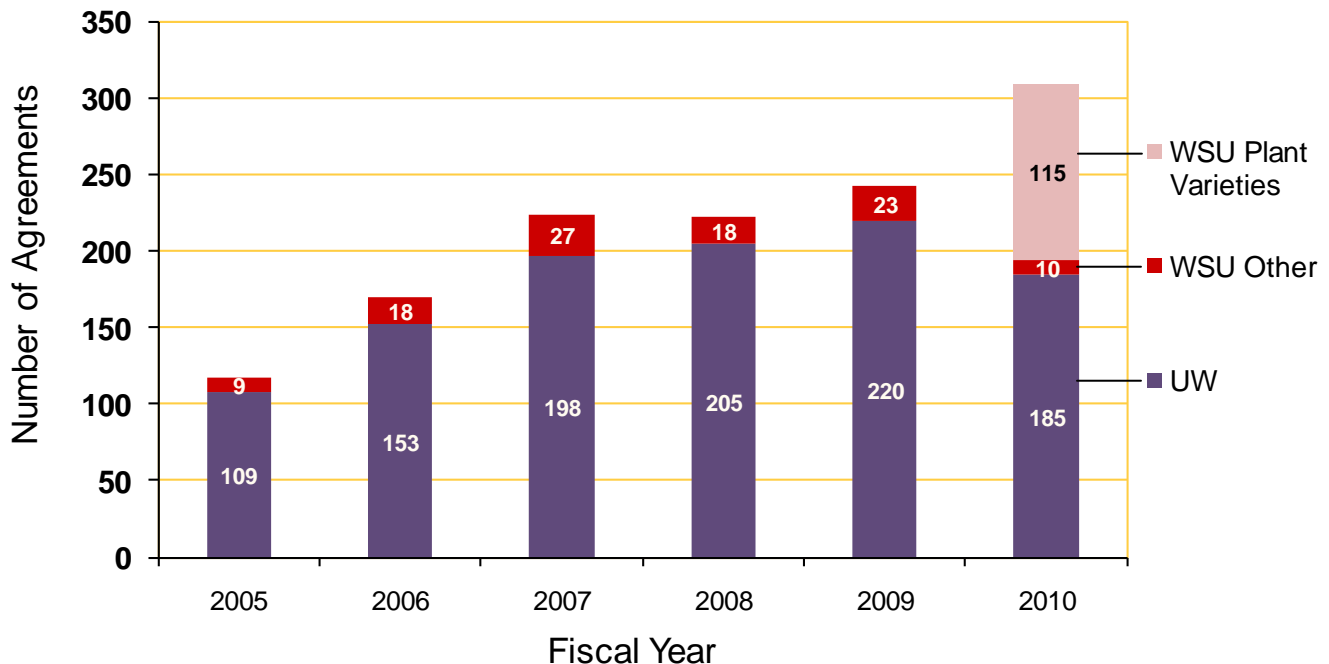
The first is through the hiring of research staff and the purchase of supplies and equipment. Academic research expenditures produced more than 15,000 jobs and \$2.2 billion in increased sales in Washington's economy in 2008-09.<sup>5</sup>

The second is through the use of research results to develop new technologies with commercial potential. This is known as "technology commercialization."

Licensing makes new research-generated technologies available for commercial application by outside organizations and private companies. The university and the researcher sometimes receive a small royalty for the commercial use of their research results. These royalties are often channeled back into research and development activities at the institution.

There has been a steady increase in licensing activity since 2005. In 2010, WSU developed a new apple variety that led to 115 separate licenses with individual growers in the Northwest. Without that technology, overall licensing activity would have declined due to the downturn in the economy and the short supply of investment capital.

**Number of Technology License or Option Agreements Executed, FY 2005-10**



<sup>5</sup> Source: NSF and EMSI, Inc., input-output model based on ESD data.

### Higher education spending provides direct economic support to communities

Higher education institutions make direct contributions to the economy and social fabric of communities across the state. Without public higher education institutions, Washington’s businesses would be unable to find the talent they need, and the product and service innovation that drives economic growth and vitality would be in jeopardy.

Washington’s higher education institutions make up a large segment of the education services industry, which has major supplier and purchasing linkages to many other industries in the Washington economy. Faculty and staff spend a portion of their salaries on groceries, autos, clothing, and other personal and family needs that help drive consumption spending.

A study commissioned by the University of Washington recently looked at the economic and employment impacts of the UW on Seattle, the Puget Sound region, and the state. It found that the UW has a statewide economic impact of approximately \$9.1 billion per year, is the state’s third largest employer, behind Boeing and Microsoft, employing 6.1 percent of the total labor force in Seattle.<sup>6</sup>

On a smaller scale, Central Washington University may have an even bigger economic impact on the community in which it is located. CWU is the largest single employer in Ellensburg, and Kittitas County.

The chart below provides a more general picture of the economic impact of operational (FTE) instruction funding for public higher education. It shows that each \$1 million in funding creates 23 direct and indirect jobs and generates \$2.1 million in additional sales in the state economy.

#### Return on Investment for Higher Education Operations Funding, 2010<sup>7</sup>

Economic Impact	\$1 Million in Operations Funding
Direct Employment	14 jobs
Total Employment (Direct and Indirect, 2010)	23 jobs
Jobs Multiplier (Total Employment/Direct Employment)	1.63
Increase in Total Earnings	\$1.0 million
Earnings Multiplier (Earnings from Total Employment /Earnings from Direct Employment)	1.59
<b>Increase in Washington Total Sales</b>	<b>\$2.1 million</b>

<sup>6</sup> The Economic and Societal Impact of the University of Washington, TrippUmbach, July 2010. <http://www.washington.edu/externalaffairs/eir/pdfs/fullreport.pdf>.

<sup>7</sup> Source: EMSI, Inc., input-output model based on ESD data.

### Higher education investments yield taxpayer dividends

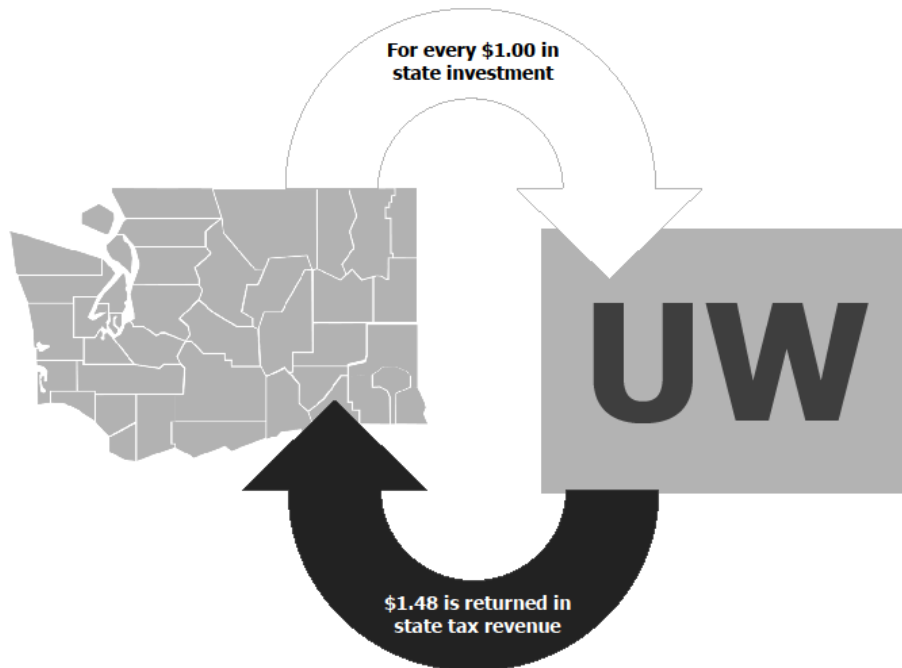
The flow of tax dollars for public higher education moves in two directions. Studies show that for every dollar of tax money allocated for higher education, a greater amount of revenue is returned to state and local governments through taxes on the economic activities conducted by the higher education system.

The State Board for Community and Technical Colleges and the University of Washington recently conducted economic impact studies examining the degree to which Washington taxpayers benefit from public investments in higher education.

The UW found that state and local governments received \$618 million in tax revenue as the result of university activities during fiscal year 2008-09. That included \$84.5 million in sales and corporate income taxes paid directly to the state, and \$533.6 million in indirect taxes paid to vendors that do business with the university. For every \$1 in state funding allocated to the UW, \$1.48 in tax revenue is returned to the state.<sup>8</sup>

The SBCTC study found that in a little less than 11 years, taxpayers recoup their investments in two-year professional and technical degree programs as a result of the increased taxes paid by higher-earning program participants.<sup>9</sup>

### University of Washington's Return on Investment for Taxpayers



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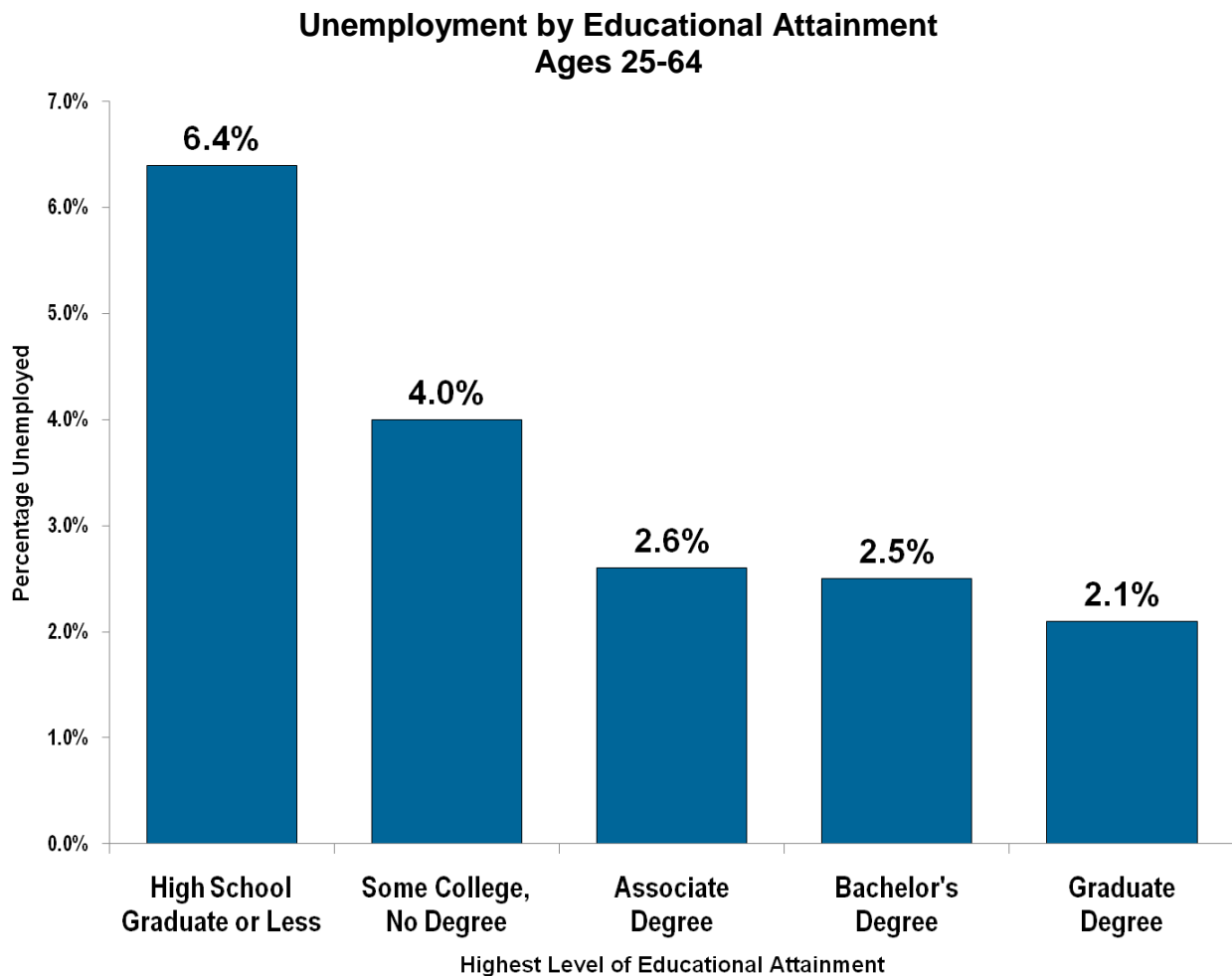
<sup>8</sup> The Economic and Societal Impact of the University of Washington, TrippUmbach, July 2010. <http://www.washington.edu/externalaffairs/eir/pdfs/fullreport.pdf>.

<sup>9</sup> Investment, Innovation, Impact: Washington State Community and Technical Colleges, State Board for Community and Technical Colleges, 2009. [http://www.sbctc.ctc.edu/public/trustees/winter09\\_ems\\_final\\_report\\_000.pdf](http://www.sbctc.ctc.edu/public/trustees/winter09_ems_final_report_000.pdf).

### More highly educated workers face reduced unemployment problems

While higher personal incomes and the additional tax revenues they generate are among the major benefits of a more highly educated workforce, increasing the state's level of educational attainment has another positive effect: it reduces costs associated with social problems such as unemployment, crime, and poor health. Maintaining consistent investments in higher education—even in challenging economic times—is one way to reduce the consequences of these social problems.

Because individuals with postsecondary degrees or certificates are in high demand in today's knowledge-driven economy, it follows that they will be less likely to be faced with unemployment. Data show the percentage of Washington residents who were unemployed in spring of 2008 declined as educational level increased. The data also suggest that more highly educated individuals are less likely to require benefits such as unemployment insurance during their working lives.

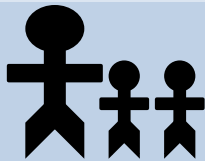


Source: Washington State Population Survey, 2008.

### Children benefit from parents who earn degrees and certificates

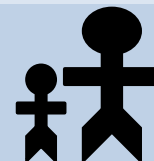
College-educated individuals tend to earn higher incomes and tend to face fewer financial burdens when raising a family. This is true for both single-parent and dual-parent families.

Parents with higher levels of education typically do not rely on federal or state welfare, live below federal poverty guidelines, or use food stamps. Families in which both parents have high school degrees only report using food stamps nearly three times as often, and federal or state welfare four times as often, as families in which both parents have bachelor's degrees. Families in which both parents are high school graduates are more than three times as likely to live below federal poverty guidelines as families in which parents earned bachelor's degrees.



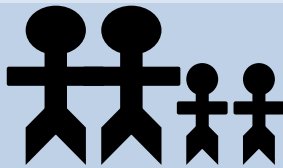
#### *Single parent without a college degree*

- Median annual household income: **\$24,000**
- Number of kids: **2**
- Percent reporting use of food stamps: **38.6%**
- Percent using state or federal welfare: **18.3%**
- Percent living below 200% of federal poverty guidelines: **66.3%**



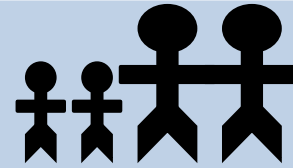
#### *Single parent with a college degree*

- Median annual household income: **\$45,000**
- Number of kids: **1**
- Percent reporting use of food stamps: **24.5%**
- Percent using state or federal welfare: **9.1%**
- Percent living below 200% of federal poverty guidelines: **32.8%**



#### *Two parent family where both parents have a high school degree*

- Median annual household income: **\$61,500**
- Number of kids: **2**
- Percent reporting use of food stamps: **13.7%**
- Percent using state or federal welfare: **4.4%**
- Percent living below 200% of federal poverty guidelines: **21.2%**



#### *Two parent family where both parents have a bachelors degree*

- Median annual household income: **\$101,645**
- Number of kids: **2**
- Percent reporting use of food stamps: **5%**
- Percent using state or federal welfare: **0%**
- Percent living below 200% of federal poverty guidelines: **6.3%**

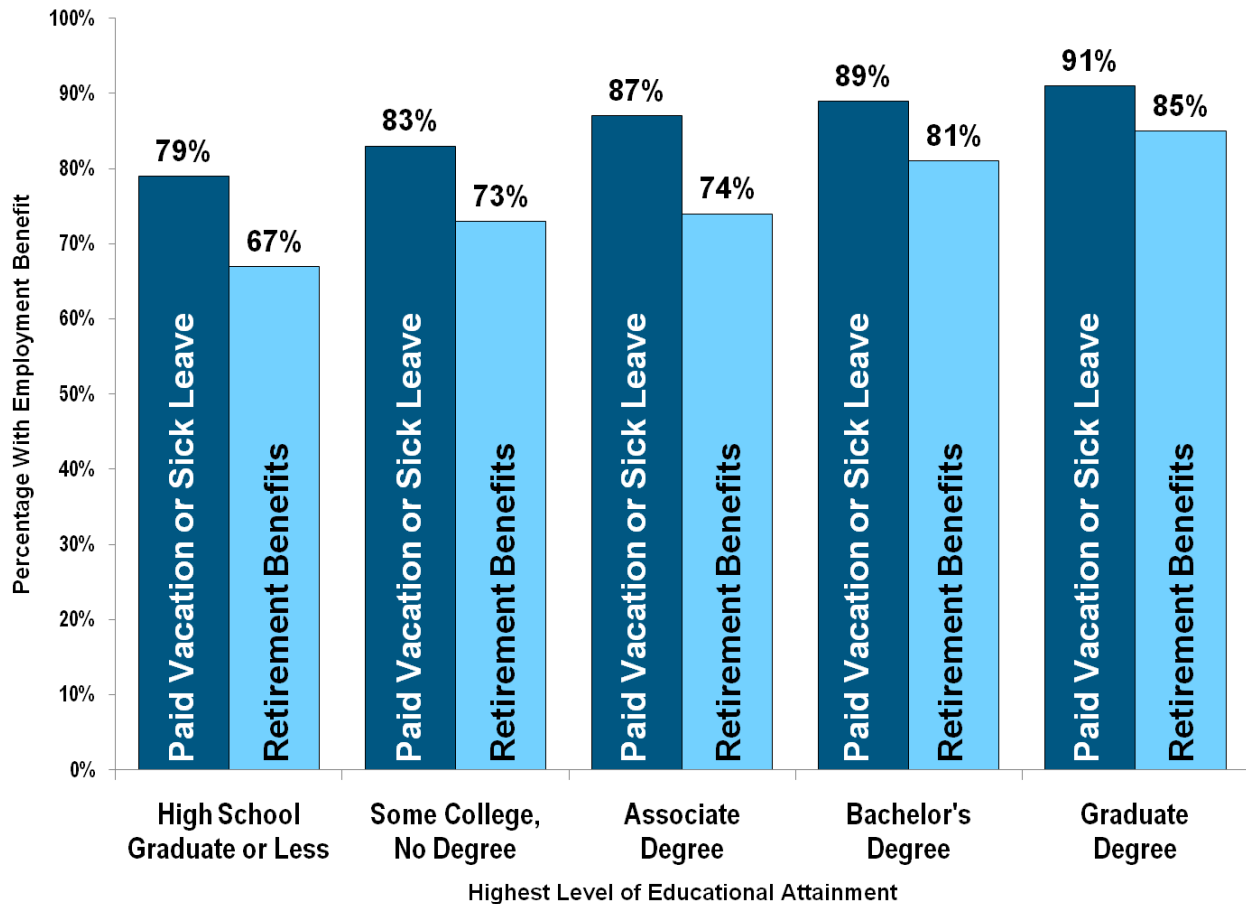
Source: Washington State Population Survey, 2008.

### Education leads to more comprehensive employer benefits

In addition to higher annual wages, educational attainment brings other financial benefits to workers and their families. For example, employees with higher levels of education are more likely to work in jobs that offer benefits packages such as paid vacation, sick leave, or company retirement plans.

Employers who need highly trained and educated workers tend to view benefits packages as one way to gain an edge over competing employers. By offering generous benefits packages, some employers also hope to reduce turnover in positions that require trained or experienced staff.

**Employment Benefits by Educational Attainment  
Ages 25-64**

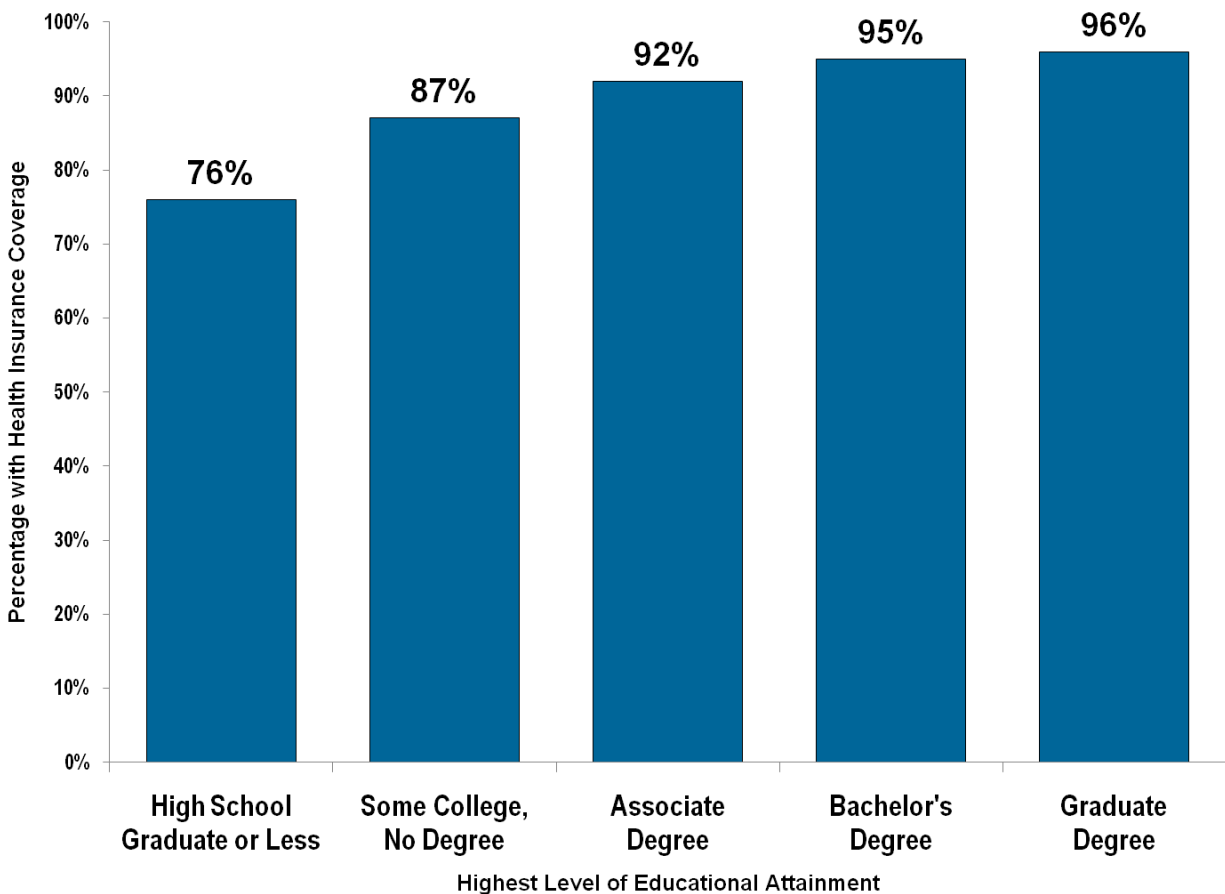


Source: Washington State Population Survey, 2008.

### Employer health insurance coverage increases with educational attainment

Individuals with higher levels of postsecondary education are more likely to have health insurance coverage acquired through a source other than the state Basic Health Plan, which provides coverage to low-income persons. Health insurance for higher-income persons typically is acquired through an employer, union, military organization, or by self-purchase.

**Health Insurance Coverage by Educational Attainment  
Ages 25-64**



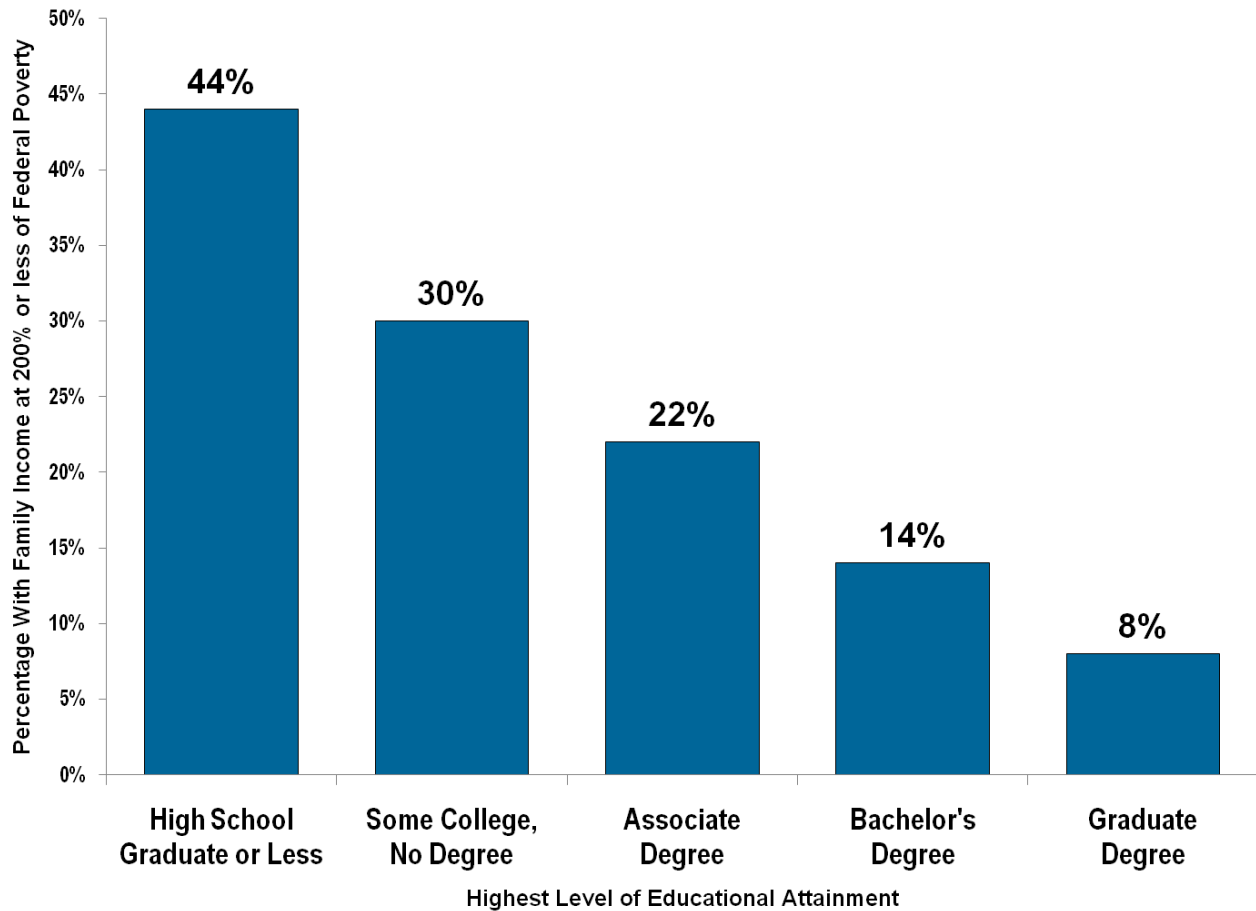
Note: Includes health insurance provide by employer, union, military, or self-purchased.

Source: Washington State Population Survey, 2008.

### Poverty levels decline as education levels rise

The financial rewards that accompany higher levels of educational attainment allow many college graduates to live lives that are well above the poverty level. The poverty rate for Washington households supporting bachelor's degree recipients is one-third the rate of households supporting high school graduates only.<sup>10</sup>

**Poverty Level by Educational Attainment and Family Income, Ages 25-64**



Source: Washington State Population Survey, 2008.

<sup>10</sup> Baum, S., & Ma, J. (2007). Education Pays. The Benefits of Higher Education for Individuals and Society. New York, New York: College Board.

### Increasing education reduces reliance on federal and state social services

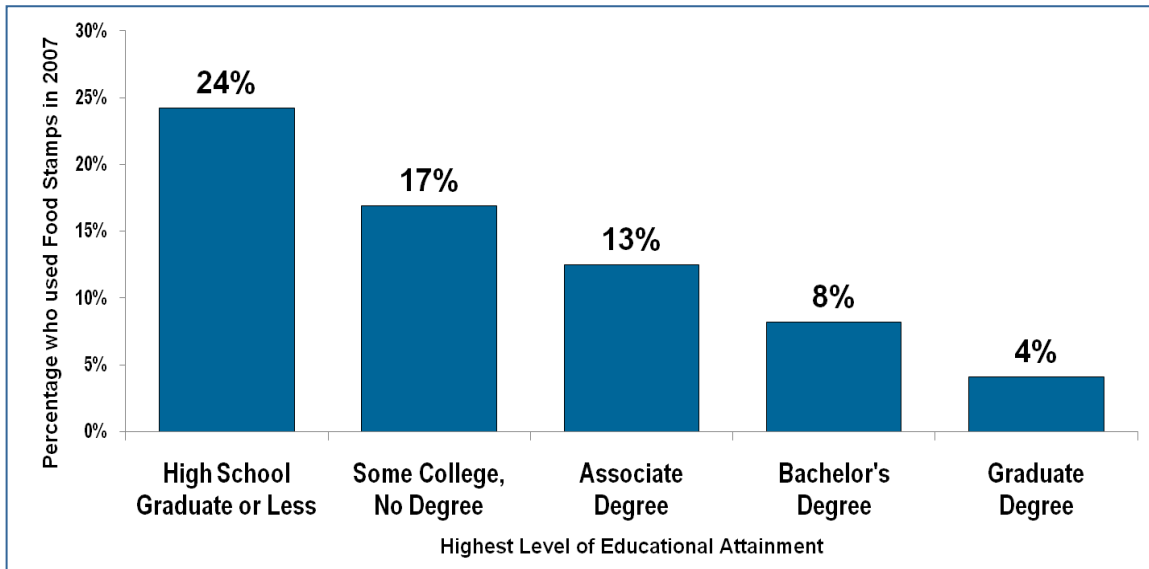
The economy's demand for workers with college degrees or certificates means added financial benefits and job security for many of Washington's more highly educated workers.

Among college-educated and trained workers, one result is reduced reliance on federal or state social service programs, such as food stamps or federal and state welfare programs.

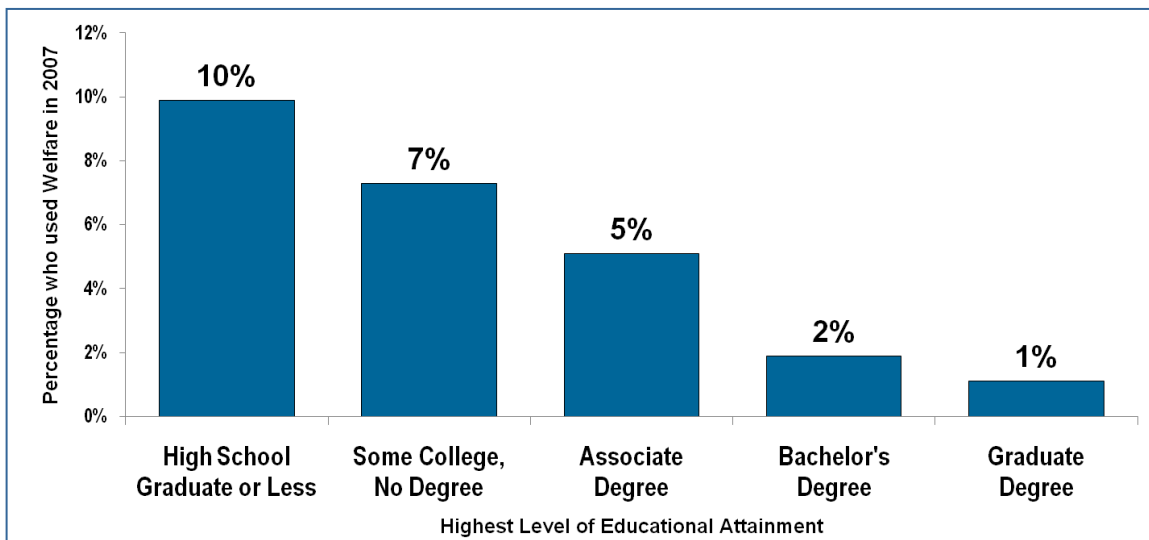
Reducing the cost of social programs by enabling more families to remain economically self-sufficient is another long-term benefit of continued public investment in higher education.

### Use of Federal or State Services by Educational Attainment, Ages 25-64

#### Food Stamps



#### Federal or State Welfare Services



Source: Washington State Population Survey, 2008.

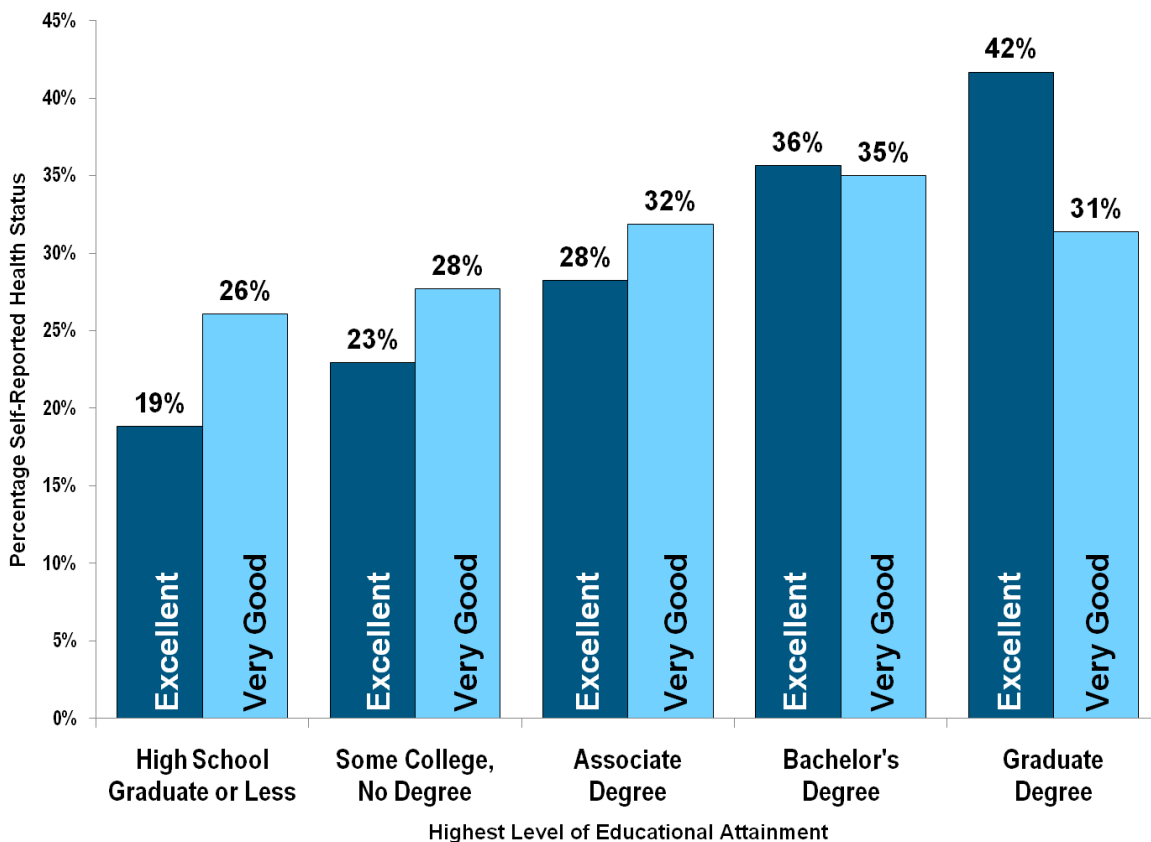
### Educated people report feeling healthier

Reducing health care costs and improving the overall health of the population continues to be a major challenge for state and federal governments. Educational attainment appears to have a relationship to healthy behaviors and perceptions of overall health.

For example, studies suggest that college graduates are more likely to heed widespread public warnings about the serious health effects of smoking than those with less education. By 1970, the smoking rate among college graduates had declined to 37 percent, compared to 44 percent for high school graduates.<sup>11</sup>

Nationally, at every age and income level, individuals with higher degree attainment report better health than those with less postsecondary education.<sup>12</sup> In Washington, the percentage of residents who perceive their health is either excellent or very good also increases with higher levels of educational attainment.

**Self-Reported Health by Educational Attainment  
Ages 25-64**



Source: Washington State Population Survey, 2008.

<sup>11</sup> National Center for Health Statistics (2005). National Health Interview Survey. As cited by Baum, S., & Ma, J. (2007). Education Pays. The Benefits of Higher Education for Individuals and Society. New York, New York: College Board.

<sup>12</sup> National Center for Health Statistics (2005). National Health Interview Survey. As cited by Baum, S., & Ma, J. (2007).

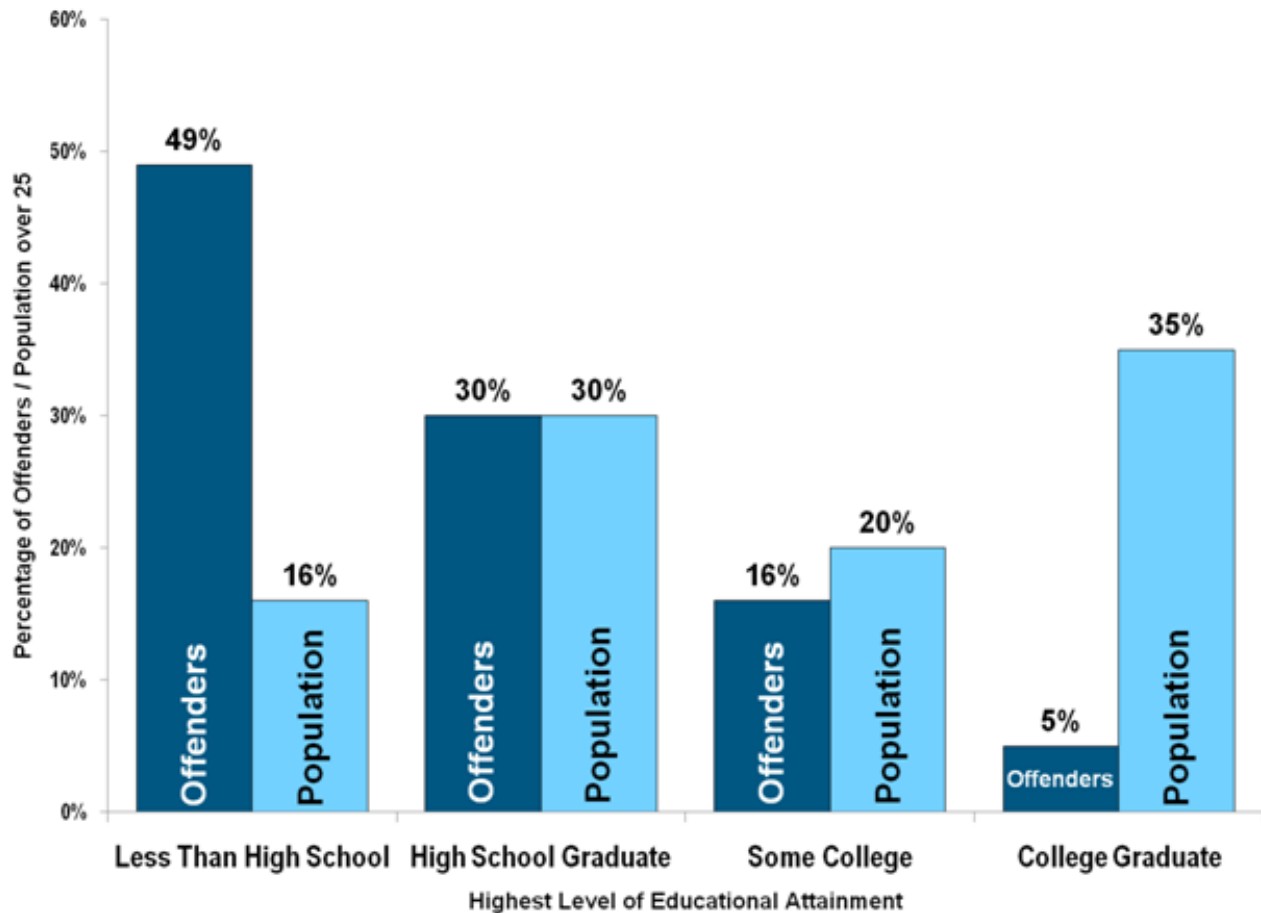
### Education reduces propensity toward criminal behavior

Studies have long shown a relationship between level of educational attainment and crime. Research exploring this relationship within Washington state could not be found, but national studies suggest that the likelihood of committing a criminal act declines as an individual's education level rises.

The U.S. Department of Justice provides data on offenders sentenced in U.S. District Court by education level. The data show a clear relationship between sentencing and level of education. While 15.5 percent of the U.S. population 25 or older have less than a high school diploma, those with less than a diploma make up nearly half of those sentenced. At the same time, those with a college degree make up 35 percent of the U.S. population but only account for 5.4 percent of those sentenced.

#### Offenders Sentenced in U.S. District Courts as compared to United States Population 25 and Over, by Education Level

Offenders Sentenced under the U.S. Sentencing Commission Guidelines



Source: Sourcebook of Criminal Justice Statistics Online, [www.albany.edu/sourcebook/pdf/t5282008.pdf](http://www.albany.edu/sourcebook/pdf/t5282008.pdf), Table 5.28.2008.

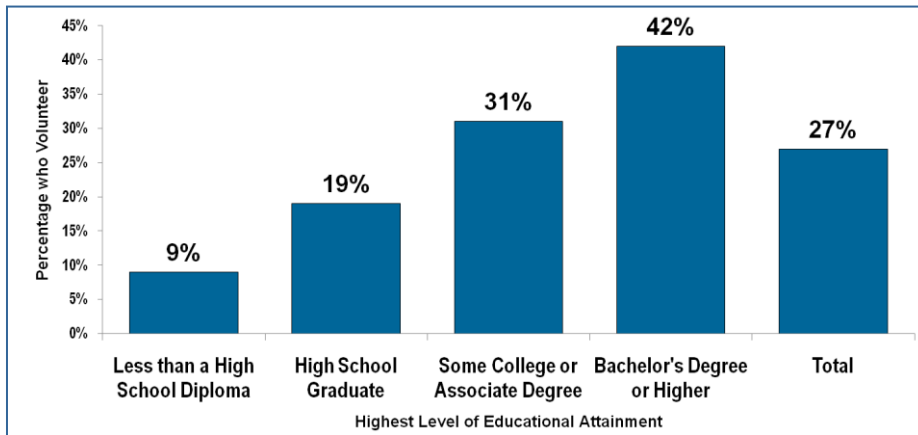
### Education influences voting behavior and volunteerism

Society benefits when citizens actively engage in the democratic process and contribute time and resources to improve their communities. Evidence suggests that levels of educational attainment are associated with increased voting behavior and participation in charitable or public service activities.

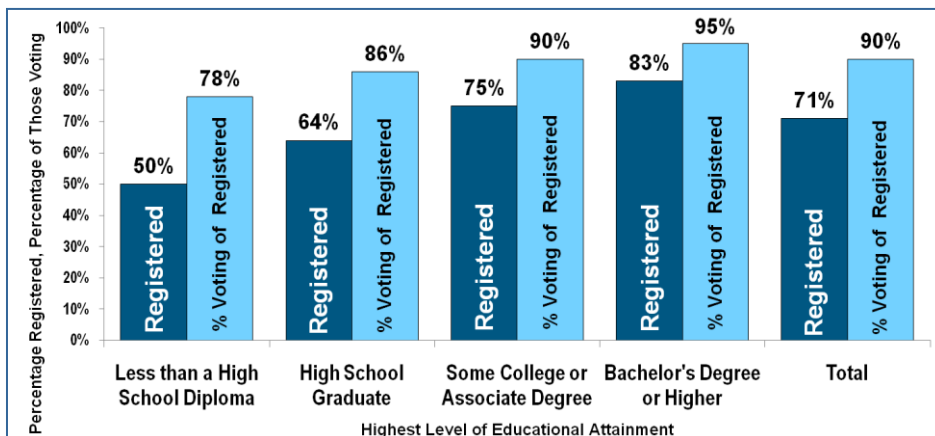
U.S. Census surveys conducted after recent national elections show that adults with higher levels of education are more likely to vote than those with less education. In another Census survey, the percentage of individuals 25 and older who engaged in volunteer activities also increased with higher levels of postsecondary education.

Rather than indicating a lack of interest in voting and volunteerism, these findings may suggest that at least some less-educated people face greater hurdles to participation than those with more education. For example, following the November 2008 general election, nearly 40 percent of non-voting survey respondents with high school diplomas or less reported “illness or disability” as a reason for not voting, compared to 23 percent of those with at least some college. Those with less education also were more than twice as likely to report “transportation problems” as a reason for not voting.

**United States Volunteerism by Educational Attainment**



**U.S. Voter Registration and Participation**



Sources: Volunteerism: Supplement to the September 2007 Current Population Survey. Sponsored by the Corporation for National and Community Service. Voting: U.S. Census Bureau, Current Population Survey 2008.