

Return on Investment of USHE Graduates *Individual and State Benefits of Post-Secondary Education*

Both nationally and in the State of Utah there is an increased focus on the monetary benefits of completing a post-secondary credential. State leaders, legislatures and members of the public want to better understand the return on investment from a state perspective as well as a student perspective. This issue brief will highlight the wage benefits a graduate will experience over time by having a post-secondary credential as well as benefits to the state as a result of increased income tax collection.

The following analysis estimates that for every \$1 the state invests in public higher education, returns \$3 in increased tax revenues. Students who earned a one-year certificate saw their tuition investment of \$3,568 (SLCC) increase their wage return by 42%, or \$6,000 in one year. 24,472 students who graduated from Utah's public colleges and universities in 2016 collectively earned an estimated \$470 million more in increased wages in their first year of employment after graduation. Individuals who earned a bachelor's degree (almost half of all 2016 graduates) earned 85% more than those who didn't finish high school. After 5 years, wages for those with a bachelor's degree will further increase an estimated 46% above their 1st year earnings.

What has changed?

Increased pressures on national and state coffers in the last 20 years, including the impact of the Great Recession (2008-2012), has resulted in state governments limiting—and in many cases decreasing—their overall investment in higher education institutions. This effort ultimately shifted how higher education costs are paid. With decreased state support, students are asked to cover more of the cost of their education than previously. In 1991, state appropriations accounted for 74% of revenues for public colleges and universities. By 2012, only 53% of educational revenues came from appropriated money, with students now bearing 47% of the cost. In 2016, the average share of educational cost remained at a 53% appropriated, 47% tuition & fee split (SHEEO, 2016). There is concern that the reduction of state support for post-secondary education creates barriers for access and completion for many students and has caused many to question the value and impact of the post-secondary credential. Lack of access to post-secondary education will limit the ability of states in meeting both educational and economic growth goals. If there was an increased investment by states in post-secondary education, improvements in both access and completion will help them see a measurable return on the investment in education.

Wage benefits of a post-secondary credential

There are many recognized benefits of an education level beyond high school to both the student and their communities, such as increased volunteerism, lower crime rates, and lower poverty levels. This issue brief focuses specifically on the impact on wages associated with increased educational attainment. The base wage for comparison purposes is that of someone with a high school diploma and all wage data is specific to Utah. Wages were computed based on assumptions of full-time employment earning at or above minimum wage.

American Communities Survey

Data retrieved from the U.S. Census Bureau, American Community Survey (2016, 1-year estimates) provides a look at median wages for a sample of Utahns ages 25-64. The value-added associated with education levels is readily apparent. For example, a Utahns with a bachelor's degree earns an estimated \$16,241 more per year than someone with only a high school diploma in 2016 (Figure 1).

2016 Median Wages

All Utahns ages 25-64
 (American Communities Survey, U.S. Census Bureau)

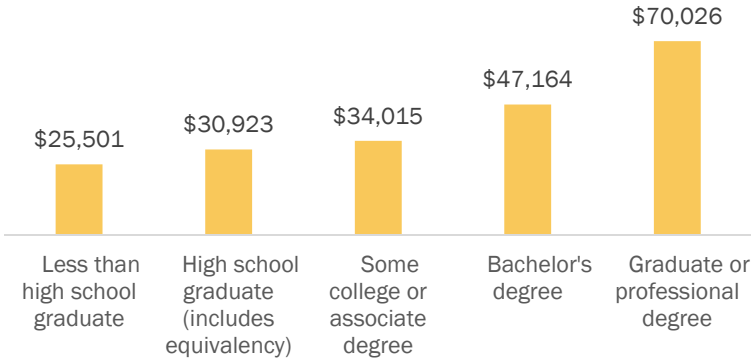


Figure 1 - American Community Survey 2016 1-Year Estimates, Median Wages by Educational Attainment

Utah System of Higher Education Data Match

Through a data sharing agreement with Utah’s Department of Workforce Services, individuals from USHE’s 2016 graduating class were matched to their Unemployment Insurance (UI) wage records. Matched records that had four quarters (3rd quarter 2016 through 2nd quarter 2017) of assumed full-time employment (earnings greater than full-time at minimum wage) were used to estimate the first year median wages of USHE 2015-16 completers by award level. As is the case with the ACS data, the benefits of additional degree attainment stand out with even the lowest award level (certificates), earning approximately \$6,000 a year more than someone with only a high school diploma. This impact almost doubles to \$12,000 per year at a bachelor degree level (figure 2).

2016 - 1st Year Median Wages

Graduates from Utah Public Colleges & Universities
 (Utah Dept. of Workforce Services)

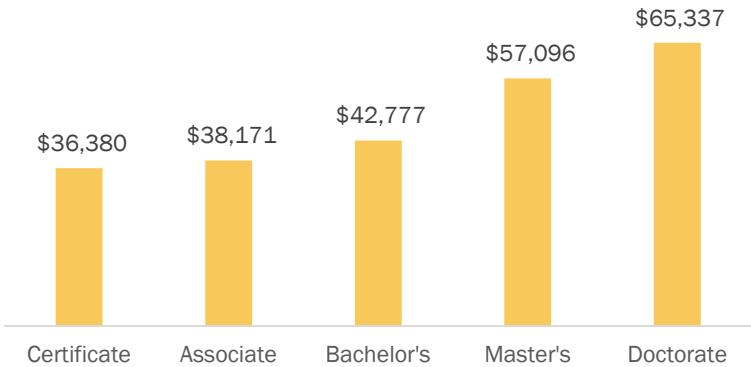


Figure 2 - Median 1st Year Wages by Degree Level for the 2015-16 USHE Graduates

When comparing the added benefit of the award (certificate \$6,000) to the cost of tuition and fees (\$3,568 SLCC 1-year 2016), it becomes evident that education is a profitable personal investment that begins to show returns almost immediately.

State return on investment

The benefits the State of Utah receives from higher educational levels of its population are evident in many aspects such as the quality of life of its citizenry. For the purpose of this brief, the focus will be solely on the impact of increased wages on tax revenues for the state.

Investment:

In 2015-16 the State of Utah appropriated approximately \$5,996 per full-time equivalent (FTE) student for direct instructional costs (USHE 2017 Cost Study). Using this figure, the state would spend approximately \$23,984 per bachelor degree (four years at \$5,996). Extending this assumption to all degrees awarded in 2016, the investment Utah taxpayers made in the education of 2016 graduates totaled approximately \$590,600,004. While the \$590.6 million invested seems like a large amount of money, the amount of money the state will receive back in higher tax payments over a 30-year career of a graduate is estimated to be over \$1.6 billion; in other words, \$3 in new tax money for every \$1 invested in education.

The addition tax revenue estimates take into account that not all graduates will enter the workforce, and holds their wages and tax rates constant over their 30-year career (table 1.)

Table 1 – Return on Investment Calculations for the 2015-16 Graduating Class

	Distribution of New Degrees	New Degrees	Work Force Participation Rates ⁺⁺	New Degrees in Workforce	Amount Earned over High School Level Median	Total Added Annual Income to Utah's Economy	Estimated Additional Tax Contribution 9.63%
Certificate	5%	1,741	77.6%	1,351	\$11,518	\$15,560,971	\$1,498,522
Associate	34%	11,483	77.6%	8,906	\$10,859	\$96,707,307	\$9,312,914
Bachelors	48%	16,298	83.6%	13,620	\$16,284	\$221,784,879	\$21,357,884
Masters	10%	3,483	83.6%	2,912	\$37,025	\$107,815,366	\$10,382,620
Doctorate	2%	817	83.6%	683	\$41,847	\$28,581,306	\$2,752,380
Annual Impact - Post Graduation	100%	33,822		27,472		\$470,449,829	\$45,304,319
Assumed 30 years of Employment						\$14,113,494,876	\$1,359,129,557
Economic Multiplier (1.2) Additional*						\$2,822,698,975	\$271,825,911
Value Added to Utah's Economy and Tax Base (30 Year Estimate)						\$16,936,193,852	\$1,630,955,468

⁺⁺ B23006: EDUCATIONAL ATTAINMENT BY EMPLOYMENT STATUS FOR THE POPULATION 25 TO 64 YEARS - Universe: Population 25 to 64 years 2016 1yr estimates

These estimates hold wages and tax rates constant, which understate the true return to the state over 30 years. A look at similar data from the 2011 graduating class comparing first year wages to their wages five years after graduation show significant increases in earnings across all degree levels (USHE Wage Dashboard 2017). Wage earnings increase for the low-end certificate holders by over \$8,000 per year while wages for those with a professional degree (e.g. medical doctor, lawyer) increase by over \$36,000 per year (figure 3).

USHE 2011 Graduates

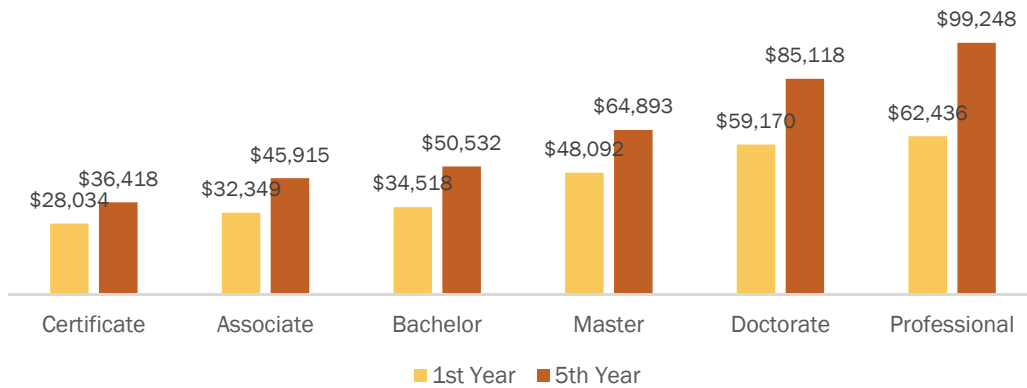


Figure 3 – USHE 2011 Graduates 1st Year Wages v. 5th Year Wages by 2011 Degree Level

The growth in wages will only lead to higher returns on the taxpayer investment in education, while the original cost to provide that education does not increase.

Source Data

SHEEO (2016), *The State Imperative*, Armstrong, J. Carlson, A., Laderman, S., Downloaded Dec. 15, 2017
http://www.sheeo.org/sites/default/files/State_Tuition_Fees_Financial_Assistance_2017.pdf

Utah Taxpayers Association (2017) “How Utah Compares – FY2014 TAXES AND FEES”,
<http://www.utahtaxpayers.org/wp-content/uploads/2017/03/How-Utah-Compares-2016.pdf>

American Community Survey (2016) B200004 MEDIAN EARNINGS IN THE PAST 12 MONTHS BY EDUCATIONAL ATTAINMENT FOR THE POPULATION 25 YEARS AND OVER, Downloaded 12-2017
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USHE 2017 Cost Study (2017), USHE 2018 Data Book, Tab I.
<https://higheredutah.org/pdf/databook/2017/TABICostStudy.pdf>

USHE 2017 Wages downloaded from: <https://higheredutah.org/data/utah-wage-information/>