

Education and Jobs

Education matters when it comes to pay and unemployment rates, although less in some sectors than others in Minnesota.

Quarterly Workforce Indicators (QWI) data provide valuable insights about the educational levels of adult workers in Minnesota, along with other information on age groups, gender, race

and ethnicity, new hires and separations.¹

The data have some limitations, though. Employment totals are not exactly comparable with other data sets because

QWI data do not include self-employed workers or independent contractors. Also, QWI data by educational attainment include only workers who are 25 or older.

TABLE 1

Minnesota Quarterly Workforce Indicators by Industry and Age of Workers, 2011

Industry Title	Total Jobs	14-24 Years Old	Percent	25 Years Old and Over	Percent
TOTAL, ALL INDUSTRIES	2,565,835	362,078	14.1%	2,203,757	85.9%
Agriculture, Forestry, Fishing and Hunting	17,810	3,714	20.9%	14,096	79.1%
Mining and Quarrying	5,716	340	5.9%	5,376	94.1%
Utilities	14,026	447	3.2%	13,579	96.8%
Construction	102,782	9,465	9.2%	93,317	90.8%
Manufacturing	302,686	20,346	6.7%	282,340	93.3%
Wholesale Trade	126,440	9,560	7.6%	116,880	92.4%
Retail Trade	276,649	79,176	28.6%	197,473	71.4%
Transportation and Warehousing	65,864	4,948	7.5%	60,916	92.5%
Information	54,000	5,201	9.6%	48,799	90.4%
Finance and Insurance	128,930	7,299	5.7%	121,631	94.3%
Real Estate, Rental and Leasing	42,632	3,746	8.8%	38,886	91.2%
Professional, Scientific and Technical Services	126,857	8,804	6.9%	118,053	93.1%
Management of Companies	86,754	8,706	10.0%	78,048	90.0%
Admin. Support and Waste Management	127,296	21,598	17.0%	105,698	83.0%
Educational Services	228,716	12,081	5.3%	216,635	94.7%
Health Care and Social Assistance	418,756	51,854	12.4%	366,902	87.6%
Arts, Entertainment and Recreation	47,057	11,777	25.0%	35,280	75.0%
Accommodation and Food Services	196,689	80,163	40.8%	116,526	59.2%
Other Services (except Public Administration)	86,152	15,625	18.1%	70,527	81.9%
Public Administration	109,995	7,208	6.6%	102,787	93.4%

Source: DEED Quarterly Workforce Indicators program

In Minnesota, just over 362,000 jobs — or 14 percent of all jobs — are held by workers ages 14 to 24 and are therefore not included in the educational attainment data from QWI used in this article (see Table 1). Omitting thousands of younger workers in the QWI data set means it cannot give a complete picture of each industry's workforce. Accommodation and food services and the retail sector, for example, have a heavy concentration of workers under the age of 25 who would not be counted in the data. But in 13

industries listed on the table, fewer than 10 percent of the jobs are filled by people under the age of 25, meaning the data provide a fairly clear picture of educational attainment in those cases.

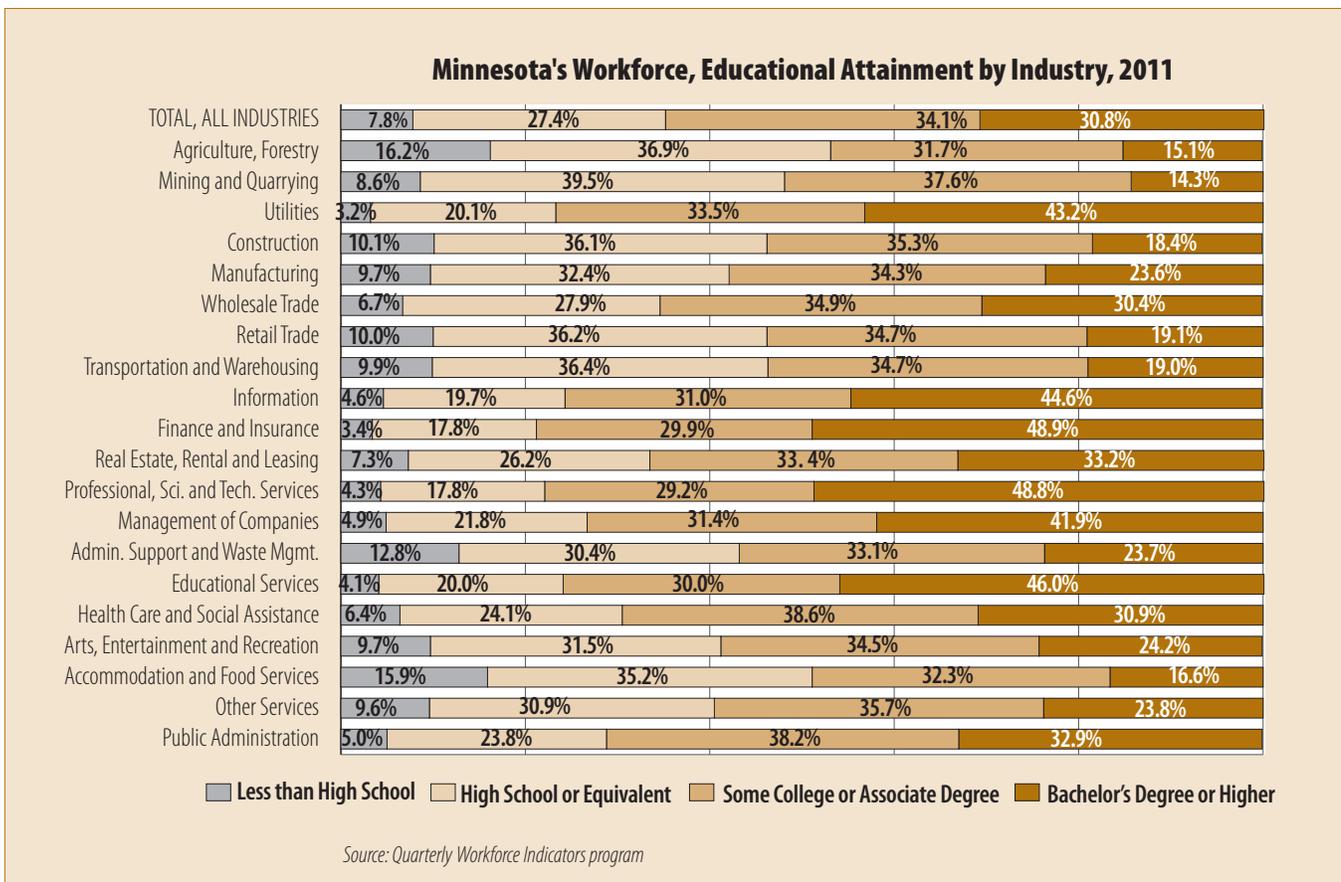
Educational Attainment by Industry

Overall, nearly two-thirds (64.8 percent) of workers 25 and over in the state have some college experience, while the other one-third (35.2 percent) have a high school diploma or less. This does not mean those jobs require that

level of educational attainment, just that workers have achieved that level of education. In many cases, workers are overqualified or underemployed for the jobs they hold (see Figure 1).

Utilities has one of the most educated workforces in the state, with more than three-fourths (76.7 percent) of the jobs held by workers with college experience, including 43.2 percent who had bachelor's degrees or higher and 33.5 percent who had some college experience or an associate degree.

FIGURE 1



Along with utilities, about three-fourths of the workers in each of five other industries had college experience: finance and insurance; professional, scientific and technical services; educational services;

information; and management of companies. The health care and social assistance sector and public administration had the highest concentrations of workers with some college experience or an associate degree.

workers 25 and over in the latter two industries had a high school diploma or less.

The construction sector and transportation and warehousing also had lower educational attainment in their workforces, with nearly one-half of the jobs held by workers with a high school diploma or less.

Education Pays

With the exception of mining, the highest-paying industries in the state tended to have workers with the highest educations. As shown in Figure 1, almost three-fourths of the jobs in each of four high-paying industries — management of companies; finance and insurance; utilities; and professional, scientific and technical services — were held by people 25 and over who earned degrees or at least experienced college.

The QWI data clearly show that investments in postsecondary education pay off in higher wages. Average monthly earnings for jobs held by adult workers with bachelor's degrees or higher were 43.4 percent higher than for the total of all jobs, and they were nearly double the average annual earnings for jobs held by workers with high school diplomas.

Likewise, average monthly earnings for workers with some college or an associate degree

In contrast, the mining, quarrying, and oil and gas extraction industry had the lowest percentage of workers (14.3 percent) with bachelor's degrees or higher, followed by agriculture, forestry, fishing and hunting (15.1 percent) and accommodation and food services (16.6 percent). More than one-half of the



were 42.5 percent higher than wages for workers with less than a high school diploma.

Average monthly earnings were higher for people with more education in all 20 main industry sectors, although the benefits of

postsecondary education varied widely by industry (see Table 2).

Average monthly earnings were highest for workers who manage companies, reaching nearly \$8,150 in 2011. But wages fell

to about \$4,400 for company managers with less than a high school diploma, although they made up less than 5 percent of the industry's workforce 25 and over. Company managers with a bachelor's degree or higher

TABLE 2

Average Monthly Earnings by Industry by Educational Attainment, 2011

Industry Title	Average Monthly Earnings, 2011					Difference between Bachelor's Degree or Higher and H.S. Diploma
	Average Monthly Wages	Less than H.S. Diploma	H.S. Diploma or Equivalent	Some College or Associate Degree	Bachelor's Degree or Higher	
TOTAL, ALL INDUSTRIES	\$4,435	\$2,778	\$3,291	\$3,959	\$6,361	93.3%
Management of Companies	\$8,143	\$4,336	\$5,270	\$6,576	\$11,268	113.8%
Mining and Quarrying	\$7,183	\$6,155	\$6,641	\$7,067	\$9,548	43.8%
Finance and Insurance	\$7,172	\$3,937	\$4,372	\$5,467	\$9,467	116.5%
Utilities	\$6,988	\$5,622	\$5,922	\$6,491	\$7,951	34.3%
Professional, Scientific and Technical Services	\$6,651	\$4,098	\$4,537	\$5,426	\$8,341	83.8%
Wholesale Trade	\$5,988	\$3,752	\$4,457	\$5,437	\$8,511	91.0%
Information	\$5,548	\$3,407	\$3,879	\$4,734	\$7,071	82.3%
Manufacturing	\$5,099	\$3,596	\$4,189	\$4,912	\$7,231	72.6%
Real Estate, Rental and Leasing	\$4,823	\$2,739	\$3,328	\$4,210	\$7,078	112.7%
Construction	\$4,713	\$3,880	\$4,325	\$4,725	\$5,845	35.2%
Public Administration	\$4,088	\$3,085	\$3,505	\$3,970	\$4,786	36.5%
Health Care and Social Assistance	\$3,977	\$2,342	\$2,701	\$3,427	\$5,931	119.6%
Educational Services	\$3,785	\$2,589	\$2,812	\$3,319	\$4,606	63.8%
Transportation and Warehousing	\$3,455	\$2,842	\$3,199	\$3,486	\$4,195	31.1%
Administrative Support and Waste Management	\$3,067	\$2,093	\$2,558	\$2,983	\$4,305	68.3%
Agriculture, Forestry, Fishing and Hunting	\$2,902	\$2,588	\$2,804	\$2,943	\$3,385	20.7%
Arts, Entertainment and Recreation	\$2,687	\$1,961	\$2,103	\$2,489	\$4,023	91.3%
Retail Trade	\$2,641	\$2,061	\$2,344	\$2,653	\$3,493	49.0%
Other Services (except Public Administration)	\$2,618	\$1,996	\$2,245	\$2,565	\$3,421	52.4%
Accommodation and Food Services	\$1,680	\$1,535	\$1,611	\$1,714	\$1,900	17.9%

Source: DEED Quarterly Workforce Indicators program



had average monthly wages that were nearly three times higher, reaching \$11,268. That figure was also more than twice as high as the average monthly earnings for managers with a high school diploma.

Workers in the high-paying finance and insurance, wholesale trade, information and the professional, scientific and technical services sectors share similar earnings gaps for their investments in postsecondary education. Workers with bachelor's degrees or higher in all four industries earn 80 percent or more than workers with high school diplomas or equivalent.

In contrast, wage gaps are much smaller for workers in the high-paying mining and utilities industries. Even though

it is the second-highest paying industry in the state, mining and quarrying has a very different workforce profile. As shown in Figure 1, nearly half of the workers over the age of 25 had a high school diploma or less, and fewer than 15 percent had a bachelor's degree or higher, yet average monthly earnings were high for workers throughout the industry. The wage advantage between a high school diploma and a bachelor's degree was much smaller than other industries — just 44 percent higher.

Utilities had much higher educational attainment among its workforce, but also a much smaller gap in average monthly earnings between workers with a high school diploma or less and workers with postsecondary education. Not to say that the investment in education isn't worthwhile, as workers with bachelor's degrees or higher still earned nearly \$8,000 per month on average in the utilities industry, compared with just under \$6,000 for utilities workers with a high school diploma.

More education also leads to significant earnings advantages in the two largest industries in the state: manufacturing and the health care and social assistance sector. Combined, these two industries account for more than one in every four jobs in Minnesota, totaling nearly

725,000 jobs, according to QWI data. Workers with a bachelor's degree or higher in health care and social assistance make nearly 120 percent more than workers with a high school diploma.

In comparison, just over 40 percent of the jobs in manufacturing are held by workers with a high school diploma or less, and they earn relatively high wages compared with other industries. Manufacturing workers with less than a high school diploma actually earned more than workers with bachelor's degrees in four other industries, averaging about \$43,155 annually. But manufacturing workers with some college or an associate degree tacked on almost \$16,000 more per year, and workers with a bachelor's degree or higher earned double the average annual earnings at \$86,775.

The lowest wage differential was found in the accommodation and food services industry, but so were the lowest wages. As shown in Figure 1, workers 25 and over in accommodation and food services represent about 16 percent of each end of the educational spectrum. The wage differential between workers with less than a high school diploma and those with bachelor's degrees or higher amounted to less than \$400 per month.

Likewise, the earnings advantage for higher educational attainment in many of the lowest-paying industries in the state tends to be lower. That is partly because these industries rely more on workers with lower

educational attainment. These data, however, might also reflect less on the value of educational attainment in these industries and demonstrate more the effects of underemployment for some workers in these industries.

Again, just because workers have college experience or an advanced degree does not mean that it is required for the job they hold.

TABLE 3

Turnover Rate by Industry by Educational Attainment, 2011

	Turnover Rate				
	Total	Less than H.S. Diploma	H.S. Diploma or Equivalent	Some College or Associate Degree	Bachelor's Degree or Higher
TOTAL, ALL INDUSTRIES	7.7%	10.2%	8.1%	7.5%	7.1%
Agriculture, Forestry, Fishing and Hunting	11.3%	13.2%	10.8%	10.7%	11.6%
Mining and Quarrying	5.2%	8.0%	5.5%	4.5%	5.2%
Utilities	3.0%	5.4%	3.7%	3.1%	2.4%
Construction	10.5%	13.9%	11.3%	9.8%	8.4%
Manufacturing	4.9%	6.2%	4.9%	4.8%	4.8%
Wholesale Trade	5.6%	7.1%	5.7%	5.4%	5.5%
Retail Trade	8.7%	9.7%	8.2%	8.6%	9.1%
Transportation and Warehousing	8.1%	9.7%	8.1%	8.0%	7.7%
Information	7.0%	9.2%	7.6%	6.9%	6.7%
Finance and Insurance	9.1%	11.6%	9.1%	9.0%	8.9%
Real Estate, Rental and Leasing	8.7%	10.6%	8.9%	8.6%	8.1%
Professional, Scientific and Technical Services	7.4%	10.7%	8.5%	7.5%	6.7%
Management of Companies	9.3%	11.5%	9.5%	9.3%	8.8%
Administrative Support and Waste Management	16.1%	19.0%	16.4%	15.7%	15.0%
Educational Services	7.3%	10.3%	8.0%	7.4%	6.6%
Health Care and Social Assistance	6.6%	9.1%	7.3%	6.3%	5.7%
Arts, Entertainment and Recreation	13.5%	15.6%	13.2%	13.0%	13.9%
Accommodation and Food Services	11.4%	11.8%	11.2%	11.4%	11.9%
Other Services (except Public Administration)	8.0%	9.5%	8.0%	7.9%	7.7%
Public Administration	4.1%	6.4%	4.7%	3.8%	3.6%

Source: DEED Quarterly Workforce Indicators program

Turnover Rates

Unemployment and turnover rates were lower for workers with higher educational attainment. For all industries, turnover rates were 10.2 percent for jobs held by workers with less than a high school diploma and 8.1 percent for workers with a high school diploma or equivalent. Workers with some college or an associate degree had a turnover rate of 7.5 percent, while those with a bachelor's degree or higher had a turnover rate of 7.1 percent (see Table 3).

In certain industries, the differences were even more pronounced. For example, the turnover rate for construction workers with a bachelor's degree or higher was 5.5 percent lower than for workers with less than a high school diploma. For workers in the professional, scientific and technical services industry, the turnover rate gap was 4 percent from one end of the educational spectrum to the other, and rates were also

much lower for higher educated workers in administrative support and waste management services, educational services, health care and social assistance, and utilities.

In contrast, turnover rates were slightly higher for workers with bachelor's degrees or higher than for workers with less than a high school diploma in the accommodation and food services industry. Turnover rates also were higher for workers with bachelor's degrees or higher than for workers with a high school diploma in the agriculture, retail trade, and arts, entertainment and recreation industries.

Investing in Education

As the data show, investing in a postsecondary education likely will pay off in higher wages and lower unemployment. The returns on investment, though, may vary widely depending on the industry and occupation. College experience is a necessity

in some jobs, especially in the higher-paying industries, while a bachelor's degree may lead to underemployment or higher turnover in other industries. In some industries, a high school diploma may be all that is needed to secure a steady, good-paying job.

By using QWI data to explore the concentration, earnings and turnover rates for workers in Minnesota's major industries, students and job seekers can make more informed career decisions. 

¹QWI data come from the U.S. Census Bureau's Local Employment-Household Dynamics (LEHD) program, which is a federal-state partnership that links employment data from state administrative records with demographic and social characteristics from Census Bureau surveys and censuses.