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Contribution of Turtle Mountain Community College to North Dakota's Economy in 2016



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Cynthia Lindquist, President, Cankdeska Cikana Community College (CCCC)
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Laurel Vermillion, President, Sitting Bull College (SBC)
James Davis, President, Turtle Mountain Community College (TMCC)
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Executive Summary

The North Dakota Association of Tribal Colleges (NDATC) is comprised of the state's five Tribal Colleges. Tribal Colleges are relatively new in North Dakota with the first college established in 1969. Tribal Colleges were established to provide post-secondary cultural-based educational opportunities on North Dakota's Native American reservations and for the urban Indian population in the Bismarck-Mandan area. Turtle Mountain Community College was chartered in 1972.

Expenditure and enrollment data provided by each respective college were used to estimate the economic impact for each of the individual colleges and the cumulative impact of the five Tribal Colleges. The combined economic impact of the five colleges is reported in Coon et al. 2017a. This report will focus on the Turtle Mountain Community College located in Belcourt, North Dakota which serves the Turtle Mountain Chippewa Native American Reservation.

Expenditures by colleges constitute the direct, or first-round, economic effects. Turtle Mountain Community College spent \$14.9 million in North Dakota in Fiscal Year (FY) 2016. Over half of these expenditures (direct effects) (\$8.5 million) represent personal income consisting of payments for wages and salaries. Total economic impact (direct plus secondary) of Turtle Mountain Community College was \$44.1 million in FY2016. Total business activities (direct plus secondary) in the *Households* sector (economy-wide personal income) totaled \$18.0 million, and was \$11.8 million in the *Retail Trade* sector. Turtle Mountain Community College employed 111 full-time and 41 part-time workers.

In addition to expenditures related to the college's operations, student spending also contributes to the economic impacts associated with the college. Expenditures by full-time and part-time students for personal items, recreation, books, supplies, and room and board were estimated to be \$4.6 million in the 2015-2016 academic year. Total economic impact from student spending was \$11.4 million (\$4.6 million in direct impacts plus \$6.8 million in secondary impacts).

Turtle Mountain Community College provides valuable post-secondary educational programs which result in both social and economic benefits. While the social value of a college degree is difficult to quantify, the economic value can be described in terms of business activity, lower unemployment, higher median annual earnings, and higher total lifetime income. Social and economic benefits accrue to individuals with higher academic achievement. Previous studies have determined that college graduates have, healthier life styles, healthier children, increased job satisfaction, have shown decreased prejudice, enhanced knowledge of world affairs, and have enhanced social status. Many of these benefits are passed onto succeeding generations. Turtle Mountain Community College and its students also have substantial impacts on the local and state economy.

Contribution of Turtle Mountain Community College to North Dakota's Economy in 2016

Randal C. Coon, Nancy M. Hodur, and Dean A. Bangsund*

Introduction

North Dakota has numerous institutions of higher education. The North Dakota University System (NDUS) consists of 11 colleges and the North Dakota Association of Tribal Colleges (NDATC) consists of five institutions. One of those five institutions is Turtle Mountain Community College (TMCC). Located in Belcourt, North Dakota, TMCC serves the Turtle Mountain Native American Reservation. The Tribal Colleges are relatively new to the state's educational system compared to the North Dakota University System's colleges and universities. The first tribal college was chartered in 1969 and Turtle Mountain Community College was established in 1972. In addition to educational opportunities for students, TMCC has an economic impact on the state and local community. Turtle Mountain Community College makes expenditures for goods and services purchased in the state, hires employees to staff their institutions, and constructs campus buildings to deliver post-secondary cultural-based education. The purpose of this study is to estimate the economic impact that TMCC's operations and student expenditures have on the North Dakota economy. The combined economic effects of the five Tribal Colleges are reported in Coon et al. 2017a, while this report will focus on the economic impacts of TMCC. Consistent with previous studies, an economic impact analysis will be completed for each of the other four Tribal Colleges and presented in separate reports (Coon et al. 2017b, Coon et al. 2017c, Coon et al. 2017d, Coon et al. 2017e). Methods, analysis, and format are consistent for each of the five colleges and previous assessments of the colleges' economic effects. Methods and analysis are also consistent with an assessment of the economic contribution of the North Dakota University System. This analysis will parallel studies conducted for the North Dakota University System.

An economic impact assessment of the North Dakota Association of Tribal Colleges was previously completed in 2012 (Coon et al. 2013). This study will update the previous study and estimate the economic impact of TMCC operations in Fiscal Year (FY) 2016 and student spending during the 2015-2016 academic year using similar analytic methods as previous studies. Prior to the 2012 study, the impacts of Tribal Colleges were examined individually; Cankdeska Cikana Community College for FY2008 (Leistriz and Bangsund 2008), Sitting Bull College for FY2009 (Leistriz and Bangsund 2010), and United Tribes Technical College for FY2010 (Gipp et al. 2011). The North Dakota University System has sponsored several economic impact assessments, FY 1999 and FY2004 (Leistriz and Coon 2005), FY2006 (Leistriz and Coon 2007), FY2008 and FY2009 (Leistriz and Coon 2009), FY2010 (Bangsund et al. 2010), FY2011 (Coon et al. 2012a), FY2012 and FY2013 (Coon et al. 2014), and FY2014 and FY2015 (Coon et al. 2017).

In addition to the economic impact analysis, this study will examine the value of a college education. A comprehensive review of published literature summarizes the social and economic value of

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a college education. While data on the value of a college education is not specific to North Dakota's Tribal Colleges, it illustrates the value of a college education in general. Published statistics and selected research findings highlight the social and economic value of a post-secondary education. Also, contained within this report is background information about TMCC including a history of the school, campus location, academic areas of study, degrees granted, and the mission of the college.

Background of Turtle Mountain Community College

Turtle Mountain Community College was chartered by the Turtle Mountain Chippewa Tribe in 1972. TMCC initially operated out of two offices of a former Catholic Convent, then moved to a basement of an abandoned Indian Health Service Hospital. In 1999, a new campus was built three miles north of Belcourt, overlooking Belcourt Lake, and to date the majority of programs operate out of this facility. The new 123-acre main campus north of Belcourt has classrooms, labs, library, gymnasium, student union, auditorium and other facilities. Currently, TMCC operates three college campuses.

The 102-acre Anishinabe Education and Cultural campus is located two miles north of Belcourt and is the primary base for their land grant activities and cultural activities. The Belcourt downtown campus encompasses five acres and was the main campus prior to 1999. The downtown campus currently provides a location for the Adult Education Program; the Vocational Rehabilitation Program; the Welding Program; and the Heating, Ventilation, and Air Conditioning Program. TMCC is a commuter college that does not provide residence halls.

TMCC obtained accreditation in 1978 from the North Central Association of Colleges and Schools and in 1984, full accreditation by the Higher Learning Commission. A Bachelor of Science degree in elementary education was granted full accreditation in 2001. TMCC educational programs include 13 Associate of Arts programs, 17 Associate of Science programs, a Bachelor of Science program with three career fields, nine Associate of Applied Science programs, and 12 Certificate programs, Career and Technical Education, and Native American Career and Technical Education Program. Bachelor of Science degrees are granted for early childhood education, elementary education, and secondary science. The Native American Career and Technical Education Program is directly responsive to and supportive of employment opportunities available to tribal members living on or near the reservation, and includes programs in computer support, building construction, management, health information management, and educational paraprofessional. An Adult and Continuing Education program was established at TMCC in 1976 to increase knowledge and improve skills and to assist adults in obtaining High School Equivalency Diplomas. In 2012, the U.S. Department of Labor awarded a job-training grant to a consortium of local colleges including TMCC to train participants for high-paying, high-skilled jobs in western North Dakota. The consortium was titled Training for Regional Energy in North Dakota (TREND) and focused on energy-related occupations such as welding, CDL, and building and construction trades.

TMCC mission statement states that the college is committed to functioning as an autonomous Native American controlled college on the Turtle Mountain Chippewa Reservation focusing on general studies, undergraduate education, career and technical education, scholarly research, and continuous improvement of student learning. In the 2015-2016 academic year, TMCC had 441 full-time students and 114 part-time students enrolled in the Fall Semester equating to 480 full-time equivalent (FTE). TMCC employs 111 full-time and 41 part-time workers.

Methods

In-state expenditures for the state Tribal Colleges comprise the direct economic impacts, or first-round effects. Actual total in-state expenditures for each of the state's Tribal Colleges were used to calculate combined direct effects. A brief questionnaire requesting expenditures for various expenditure categories was distributed to each of the Tribal Colleges. Each of the colleges completed the questionnaire providing estimates for in-state expenditures for operations expenses such as wages and salaries, benefits, construction, utilities, repairs etc. Data collection efforts for this assessment resulted in a complete and consistent data set. In-state expenditures were allocated to industrial categories, or sectors, defined by the North Dakota Input-Output Model (Coon et al. 2012b). Expenditures included both outlays for capital improvements and general campus operations. Impacts can vary year to year based on the level of capital improvements in any given year.

The North Dakota Input-Output Model was used to estimate the secondary economic impacts based on the combined expenditures of the state's Tribal Colleges. The North Dakota Input-Output Model consists of interdependence coefficients, or multipliers, that measure the level of business activity generated in each economic sector from an additional dollar of expenditures in a given sector. A sector is a group of similar economic units, (e.g., firms engaged in retail trade make up the *Retail Trade* sector). For a complete description of the input-output model, see Coon et al. (1989). The model estimates the changes in total business activity (gross receipts) for all sectors of the area economy resulting from the direct expenditures associated with each of the five Tribal Colleges. Increased business volumes were used to estimate secondary employment and estimates of tax revenues were based on historic relationships. Methods and procedures for this analysis were similar to those used in estimating the impact of other facilities and activities in the state (Leistriz 1995; Bangsund and Leistriz 2004). The North Dakota Input-Output Model was previously used to estimate the economic impacts for the Tribal Colleges in 2012 (Coon et al. 2013) and for several assessments of the North Dakota University System (Coon et al. 2014). Empirical testing has confirmed the model's accuracy in estimating changes in levels of economic activity in North Dakota. Over the period 1958-2014, estimates of statewide personal income derived from the model averaged within 8 percent of comparable values reported by the U.S. Department of Commerce (Coon et al. 2016, Bureau of Economic Analysis 2016).

In addition to impacts associated with the tribal college's operations expenditures, the economic effects associated with student expenditures were estimated. Previous assessments used secondary data from the North Dakota Career Resource Network to estimate expenditures for room and board. Representatives of the Tribal Colleges believe that tribal college students have different characteristics than students at non-tribal institutions and that secondary data used previously may not adequately represent tribal college student expenditures. For example, many tribal college students do not live on-campus, are older or may have dependents. Accordingly, in order to more accurately estimate tribal college student expenditures, financial aid cost of attendance budgets from each tribal college were used to estimate student expenditures. The direct and total economic impact of student spending was estimated separately from the impacts associated with Tribal College operations expenditures.

Student expenditures were estimated separately for each of the Tribal Colleges using each college's cost of attendance budget. Each college had several cost of attendance budgets based on student characteristics. For example, dependent students still live at home, independents students are

financially independent and student with dependents are students with children. Cost of attendance budgets were on a per semester basis. Financial aid application data was used to determine how many students were in each of the cost of attendance budget categories. Student enrollment and enrollment status (i.e., full-time, ¾-time, ½-time, or ¼-time) were provided by each of the Tribal Colleges and converted to FTE students based on credit hours. Fall semester attendance was used to estimate FTE enrollment. Spring semester attendance was assumed to be the same as fall semester attendance. FTE students for the 2015-2016 fall semester and spring semester were multiplied by the estimated student living expenses based on the various cost of attendance budgets to obtain total student spending for the academic year. Student spending for personal items, recreation, books, supplies, and room and board represent direct or first-round economic effects. Student spending for each enrollment type and category was summed to calculate total student expenditures. Outlays for tuition and fees were excluded from the estimate of student expenditures to prevent double counting. Economic effects of expenditures for tuition and fees were captured in the assessment of college operations.

Results

Turtle Mountain Community College expenditures to North Dakota entities for FY2016 totaled \$14.9 million (Table 1). Direct Expenditures were the greatest in the *Households* sector (e.g., wages and salaries), with direct expenditures of \$8.5 million. When the North Dakota Input-Output Model coefficients (multipliers) were applied to the direct impacts, secondary impacts were estimated to be \$29.2 million in FY2016. Total (direct plus secondary) economic impacts totaled \$44.1 million in FY2016. Total economic impact for the TMCC generated the greatest amounts of business activity in the *Households* sector (personal income) of \$18.0 million and *Retail Trade* sector of \$11.8 million.

Turtle Mountain Community College employed 111 full-time and 41 part-time workers. Levels of business activity resulting from TMCC's spending would support an additional 103 FTE secondary (indirect and induced) jobs in various sectors of the local and state economy. These levels of economic activity would be expected to generate sales and use tax revenues of \$548,000, personal income taxes of \$270,000 and corporate income taxes of \$72,000. In FY2016, Turtle Mountain Community College had a measurable impact on the local and state economies.

Table 1. Direct, Secondary, and Total Economic Impacts for Turtle Mountain Community College Operations, FY2016			
Sector	Direct	Secondary	Total
	-----\$000-----		
Construction	513	1,109	1,622
Transportation	462	149	611
Communications & Public Utilities	313	1,461	1,774
Retail Trade	2,544	9,284	11,828
Finance, Insurance, Real Estate	1,949	2,064	4,013
Business & Personal Services	354	790	1,144
Professional & Social Services	252	1,1700	1,422
Households	8,518	9,515	18,033
Other ¹	--	<u>3,609</u>	<u>3,609</u>
Total	14,905	29,151	44,056

¹Other includes agriculture, mining, manufacturing, and government.

Student Economic Impact

Fall enrollment for the 2015-2016 academic year was 441 full-time and 114 part-time students, resulting in 480 full time equivalent (FTE) students. Most student expenditures (e.g., books, supplies, and room and board) likely were made in the community that is home to the college, however some expenditures may occur in other cities or trade areas. While some student expenditures may occur in cities and trade areas other than those where the college is located, it was assumed, for the purpose of this study, that all student spending was in the local community where the college is located.

Based on expenditures per FTE student, students were estimated to have spent \$4.6 million in North Dakota on books, room and board, personal items, and recreation. As detailed in the methods section, expenditures for fees and tuition were not included in the estimate of student expenditures to prevent double counting. Expenditures for tuition and fees were captured in the assessment of college operations.

Average expenditures were \$5,972 per FTE student for the 2015-2016 academic year, which was slightly higher than the average for all expenditures by all students at the five Tribal Colleges for the 2015-2016 academic year. Average expenditures for Tribal College students at all five institutions was \$5,417.

Student spending at the Tribal Colleges was allocated to two sectors of the North Dakota Input-Output Model: *Retail Trade* sector (75 percent) and *Finance, Insurance, Real Estate* sector (25 percent). Direct economic impact of student spending of \$4.6 million for academic year 2015-2016 was allocated to the *Retail Trade* sector (\$3.4 million) and the *Finance, Insurance, and Real Estate* sector (\$1.1 million). Applying these expenditures to the North Dakota Input-Output Model produced an estimate of

the total (direct and secondary) economic impact. Secondary economic impacts resulting from student spending totaled \$6.8 million and total economic impacts were estimated to be \$11.4 million for academic year 2015-2016 (Table 2). The largest impacts were in the *Retail Trade* sector with \$5.1 million in retail trade activity and *Households* sector (economy-wide personal income) with total impacts of \$2.8 million. The total level of retail trade activity generated by student spending would be expected to generate \$238,000 in sales tax revenues, assuming all purchases were made in the North Dakota economy. Household expenditures would be expected to generate \$41,000 in personal income tax. Business activity from students spending would support 20 secondary (indirect and induced) jobs in the state.

Data limitations associated with student expenditures for TMCC were minimal. Issues related to expenditures for room and board were straight forward considering TMCC has no on-campus housing and payments for room and board would be made to off-campus entities. Purchases for books and educational materials present some minor limitations. Books and educational materials are likely largely purchased at campus-sponsored bookstores and accordingly would be captured in the assessment of the college's operation. Further, it is likely that most textbooks and educational materials would be purchased from publishing entities outside of North Dakota, and accordingly would not represent in-state expenditures by the college. Purchases of books and educational materials from off-campus entities would represent an in-state expenditure. Data was not available to suggest to what degree students purchase books and educational materials from on-campus or off-campus entities. To maintain consistency with previous analyses, the cost of books and educational materials was included in the student spending analysis (Coon et. al. 2012a). Although the potential for some double counting of spending for books and educational materials does exist, the effect on the total would be relatively small. TMCC cost of attendance budgets estimate student expenditures for book and supplies to be \$500 per year.

Table 2. Direct, Secondary, and Total Economic Impacts for Turtle Mountain Community College Student Spending, Academic Year 2015-2016			
Sector	Direct	Secondary	Total
	-----\$000-----		
Construction	--	204	204
Communication & Public Utilities	--	333	333
Retail Trade	3,432	1,712	5,144
Finance, Insurance, Real Estate	1,144	361	1,505
Business & Personal Services	--	154	154
Professional & Social Services	--	188	188
Households		2,759	2,759
Other ¹	-----	<u>1,083</u>	<u>1,083</u>
Total	4,576	6,794	11,370
¹ Other includes agriculture, mining, transportation, manufacturing, and government.			

Value of a College Education

A college education has both social and economic benefits. A review of published literature illustrates the range of benefits associated with a college degree. While the monetary value of higher education has been studied extensively, social benefits have been more difficult to quantify. While an analysis of the value of a college education for graduates of the TMCC was beyond the scope of this study, a review of published findings on the value of a college education will provide insight into how a college education can benefit both students and communities.

One obvious advantage of a college degree is better wages, but benefits extend beyond increased salaries. Adults with a college degree are healthier, more active citizens, and are more likely to read to their children than those without a college degree (Baum et al. 2010). College graduates are 14 percent less likely to be obese than high school graduates and nearly twice as likely to exercise vigorously. Only 9 percent of college graduates smoke compared to 27 percent with a high school diploma. A higher percentage of college-educated parents (68 percent) read to their children daily than do high school graduates (27 percent) and people with a college degree donate their time to community organizations at a higher rate than any other group (Baum et al. 2010). Rawley and Hurtado (2002) contend that benefits of a college degree are also passed along to succeeding generations. Additionally, “college attendance has been shown to decrease prejudice, enhance knowledge of world affairs, and enhance social status while increasing economic and job security” (Rawley and Hurtado 2002).

The Alliance for Excellent Education (2012) published a report stressing the importance of providing a quality education to all children, regardless of race or socioeconomic status. This report states that to maintain the economic strength of the United States, it is imperative to provide all students with a quality education. In addition to the economic benefits individuals receive from increased education, communities, states, and the nation also benefit. For example, if the 2011 high school graduation rate would have been 90 percent, an additional 750,000 students would have earned a diploma, which would have resulted in an additional \$9 billion earned each year and increased tax collections of \$2 billion per year at the federal, state, and local levels (Balfanz et al. 2012). The four-year adjusted cohort graduation rate in 2010-2011 was 79 percent and 86 percent in North Dakota (U.S. Department of Education, 2017). Although the study did not report statistics specifically for Native American students, it stated that 31 percent of whites ages twenty-five and older held a Bachelor’s degree in 2011, compared to just 20 percent of blacks and 14 percent of Hispanics (Alliance for Excellent Education 2012).

The Alliance for Excellent Education (2012) study concluded that improving education levels in the United States could save tens of billions of taxpayer dollars annually on social costs, such as health care, unemployment, and incarceration. Improving education for traditionally underserved and under-represented groups is a major factor in breaking the cycle of poverty and disenfranchisement. Low education levels are closely associated with increased rates of homelessness, teen pregnancy, and community violence.

Research by Hardy (2010) compiled seven benefits associated with higher education. Benefits were categorized as either economic or social. Economic benefits include higher earnings potential, employer-provided health care coverage, and job stability. Social benefits were lower stress, healthier lifestyle choices, job satisfaction, and future children benefits. Job satisfaction is a benefit that might be

overlooked, but because people spend most of their lives working, how they feel about their work can greatly affect them. Salient observations regarding future benefits for children included correlation between mother's education and the health of her children. Child mortality rates decreased as the mother's education attainment levels increased, and parents with a higher education had higher expectations for their children to earn a college degree. In addition, parents with college degrees were more likely to pay for their children's college education. In a report released by Cankdeska Cikana Community College (2010), the social benefits particular to Native American reservations were listed as mitigation of social problems, centers for preservation of culture, language and traditions, provision for further educational opportunities, technology transfer, and community programs.

Numerous studies have examined the earnings advantage for a college graduate compared to a high school graduate. However, the lifetime earnings advantage for a college degree varies by study. Lifetime earnings advantage ranged from a low of \$150,000 (Robinson 2010), to a middle range of \$650,000 (Pew Research Center 2011), with the highest of \$1,000,000 (Longley 2010). The wide range of values for a college degree were due to assumptions regarding unemployment and underemployment. Robinson (2010) assumed that 29 percent of college graduates are underemployed (i.e., working at high school-level jobs). Current national unemployment rates remain in the 5 percent range, and many college graduates may be underemployed based on the level of education. However, these workers will move into jobs in their career field as they become available. Robinson (2010) also acknowledged that the value of a college education could range from \$150,000 to \$500,000 over the course of a lifetime. An estimated \$1 million earnings advantage for a college degree was the highest reported. People with less than a high school degree are at a distinct disadvantage to those with high school or college degrees. The unemployment rate for individuals in the United States with less than a high school diploma was 8.0 percent compared to 2.8 percent for individuals with a Bachelor's degree in 2015 (Figure 1).

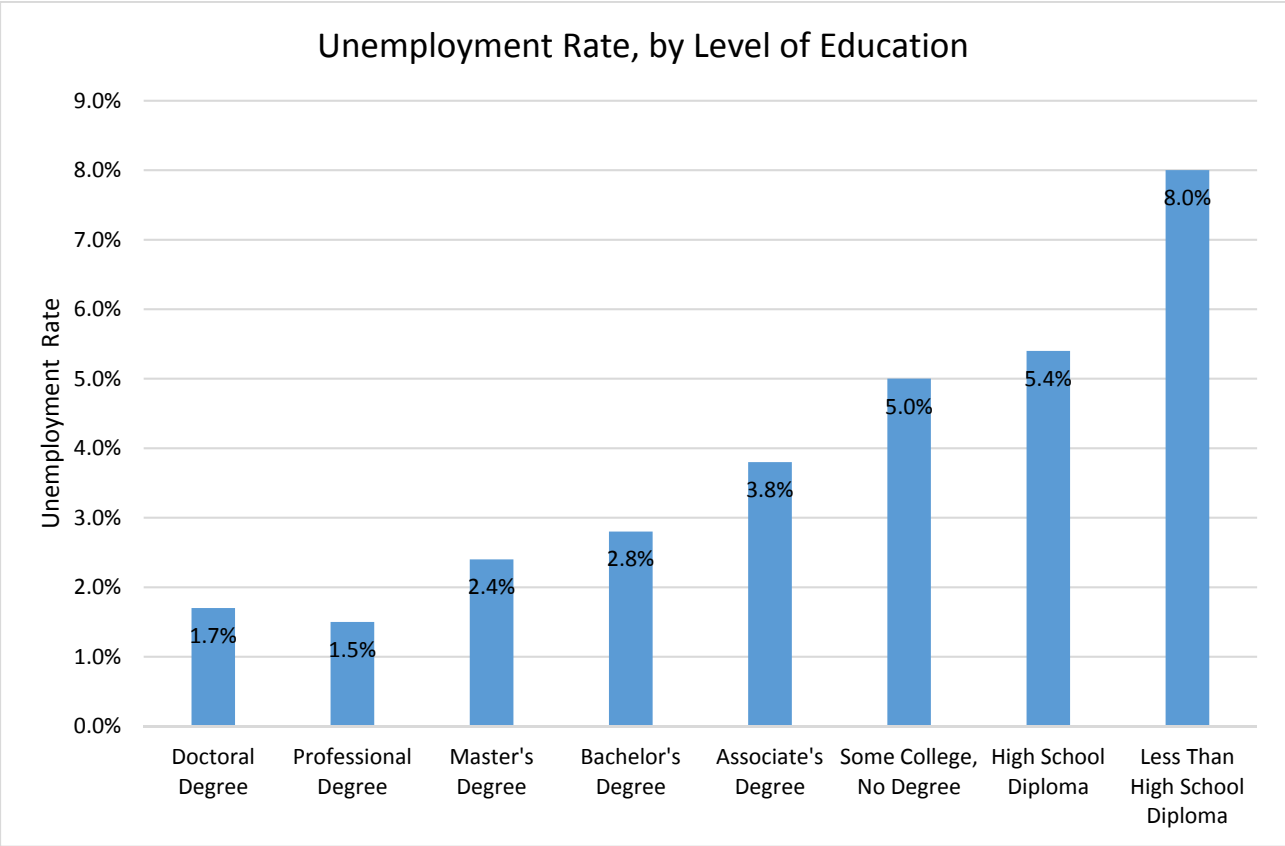


Figure 1. Unemployment Rate, by Level of Education, United States, 2015
 Source: U.S. Bureau of Labor Statistics 2015

Adults in the United States with, at most, a high school degree received median annual earnings that were about 60 percent of those with a Bachelor’s degree in 2015 (Figure 2). Bachelor’s degree holders median annual earnings were \$59,124 compared to \$35,256 for those with a high school degree (Bureau of Labor Statistics, 2012). Baum and Ma (2007) completed a comprehensive assessment on the value of higher education and analyzed income earning potential by level of education, race/ethnicity, and gender. This study developed rates of lifetime earnings for all educational levels compared to a high school degree baseline (i.e., a high school degree had a value of 1.00).

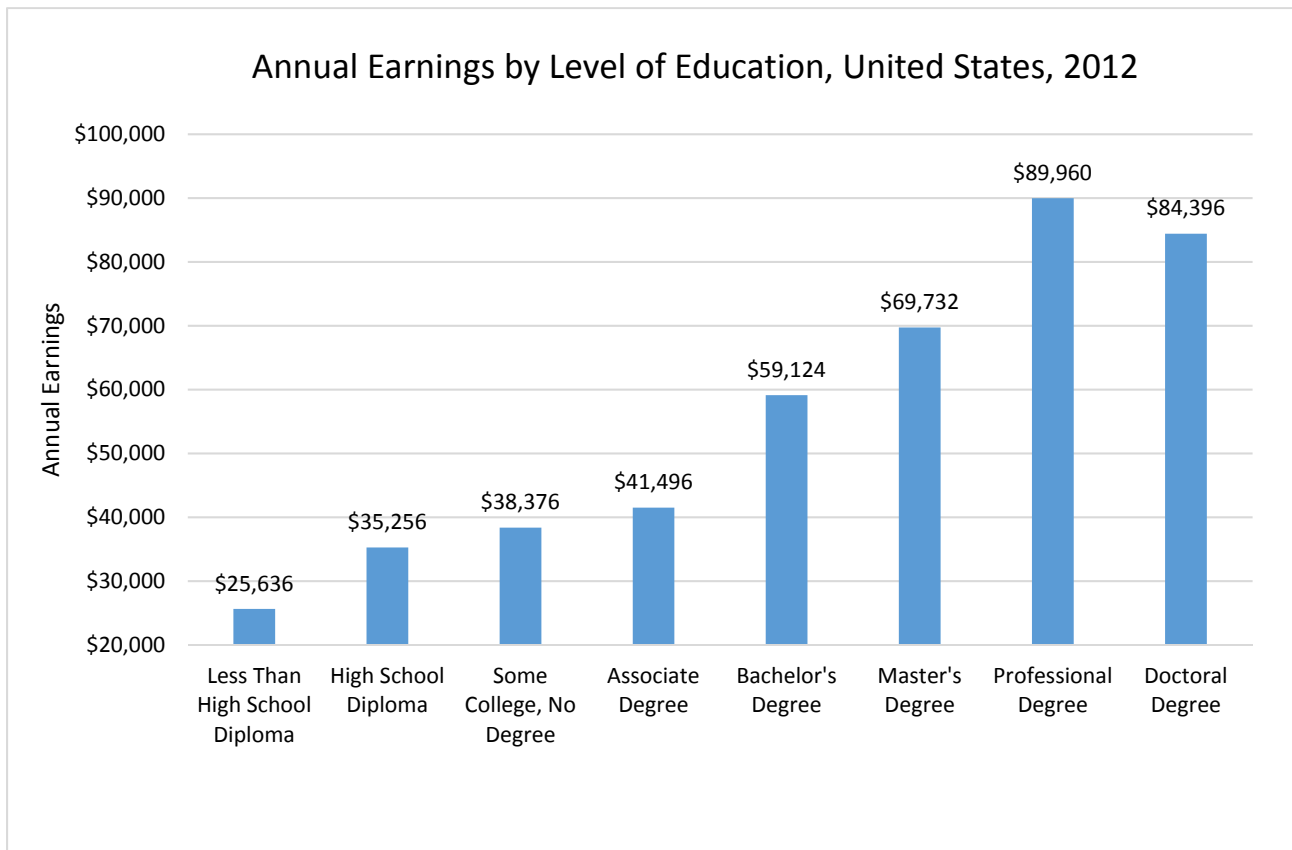


Figure 2. Median Annual Earnings of Adults Age 25 and Older, Full-time Workers, United States, 2015
 Source: U.S. Bureau of Labor Statistics 2015

Figure 3 presents the earnings ratio for various levels of education. A Bachelor's degree has an earnings ratio of 1.65, meaning that lifetime earnings of a college graduate will be 65 percent more than a high school graduate (Baum and Ma 2007). Lifetime earnings for those with an Associate's degree were 27 percent higher than earnings for those with a high school diploma. A non-high school graduate will earn 28 percent less than a high school graduate over their working lives. Post-baccalaureate degrees returned even higher lifetime earnings.

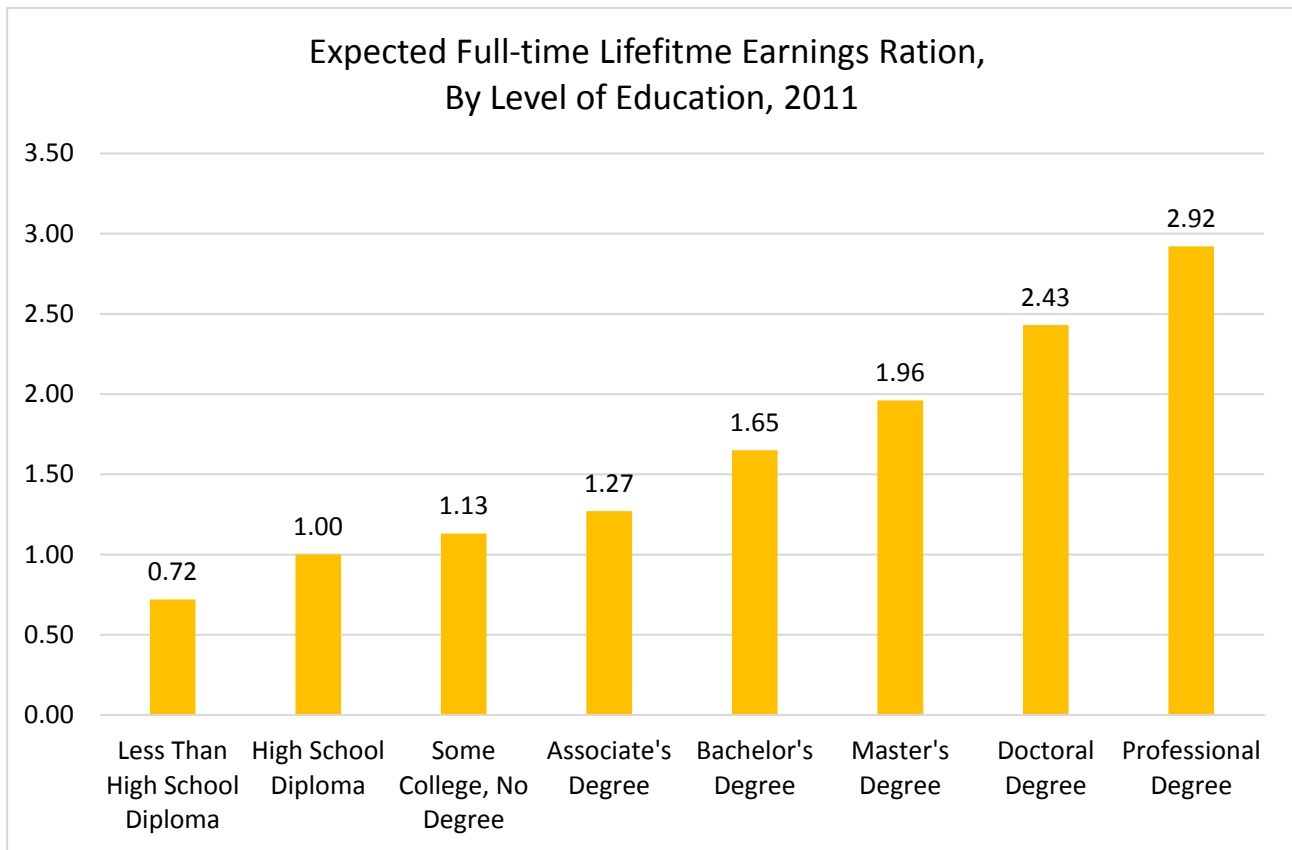


Figure 3. Ratio of Expected Lifetime Earnings Relative to High School Graduates in the United States, by Level of Education, 2005

Source: Baum et al. 2013

The percentage difference in median wages associated with level education clearly shows the wage effects associated with education. The median income for individuals with an Associate’s degree was 25 percent higher than the median income for an individual with a High School diploma in 2015. Median earnings associated with a Bachelor’s degree were 67 percent higher earnings associated with a High School diploma and median earning for a Master’s Degree were 104 times that of a High School diploma. The differences in median wages between a High School Diploma and higher levels of education have remained relatively constant since 2005 (Table 4).

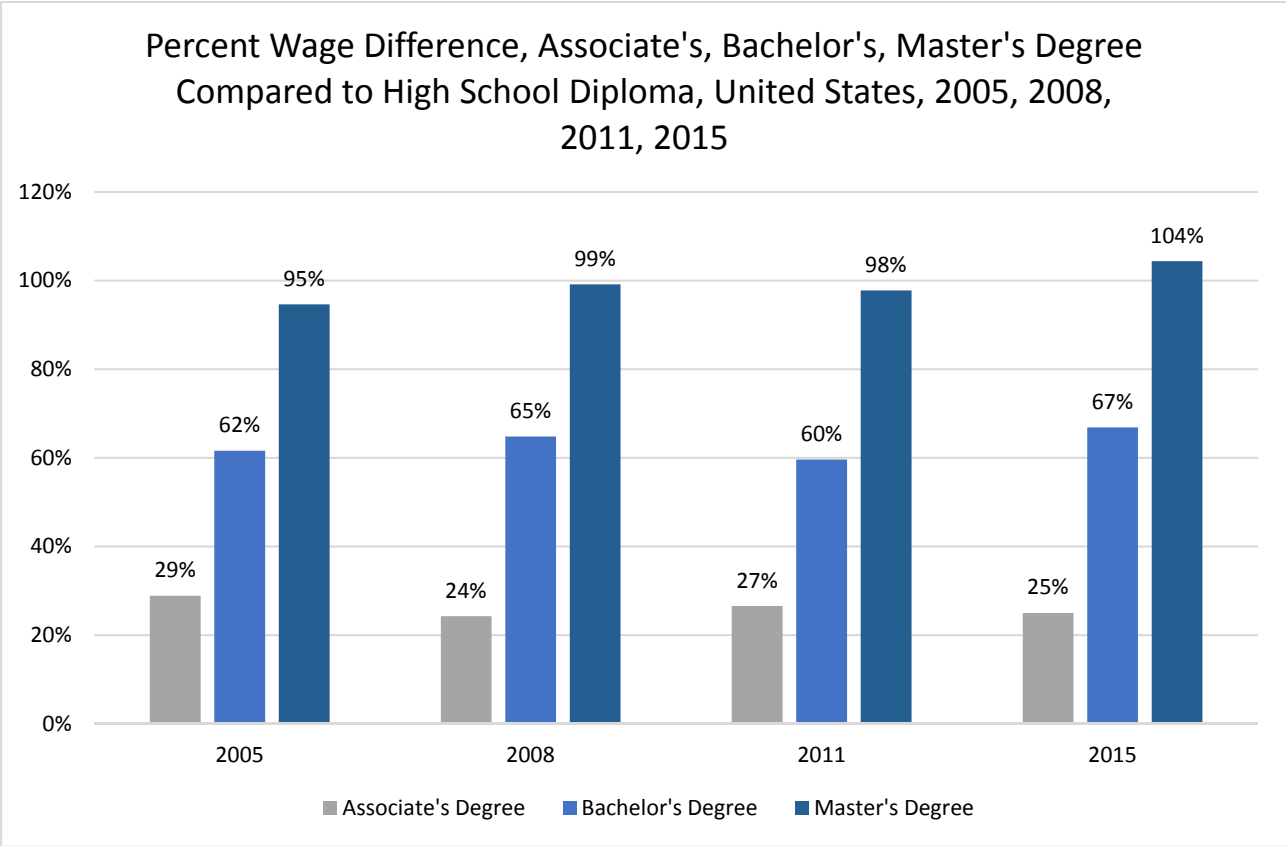


Figure 4. Percent Average Difference in Wages for, Bachelor’s Degree and Master’s Degree Compared to High School Diploma, United States, 2005, 2008, and 2015
 Source: Baum et al. 2010

Zaback et al. (2012) also developed earnings ratios for education levels relative to a high school degree and developed the ratios for different academic areas (i.e., arts and humanities, business) and for each state. This analysis also found that a college degree results in a higher median income, even though the variation across states and disciplines is substantial. Almost without exception, each successive level of higher education attainment results in additional economic benefits. Clearly, educational achievement at every level is associated with greater lifetime earnings.

Despite well-documented benefits of higher educational attainment, educational attainment was lower on Native American reservations than for North Dakota overall (U.S. Census, 2015). Statewide, 4 percent of the state’s population age 25 or older have at most, some high school education but no diploma. On the state’s Native American reservations, the percentages of the population with some high school education but no diploma are higher, ranging from 6 percent on Fort Berthold to 15 percent on Spirit Lake (Figure 5). Attainment is similar for a high school diploma with roughly a third of the both Native American and state-wide population with a high school diploma. The exception is Turtle Mountain where only 18 percent of the population age 25 or older has a high school diploma. Figure 6). Statewide 20 percent of the population 25 years and older has a Bachelor’s degree compared to 10 percent on the Spirit Lake reservation, 13 percent on Standing Rock, 14 percent on Fort Berthold, and 16 percent on Turtle Mountain. Nationally, in 2015, 42.3 percent of the population 25 years and older had a

two-year degree and 32.5 percent had a four-year college degree (Ryan and Baum 2016). Women were slightly more likely to be college-educated than men, with 32.7 percent having at least a Bachelor’s degree compared to 32.3 percent for men (Ryan and Baum 2016). Across nearly every level of education, educational attainment is lower on the state’s Native American Indian reservations than in North Dakota and the United States on average (Figure 5 and Figure 6).

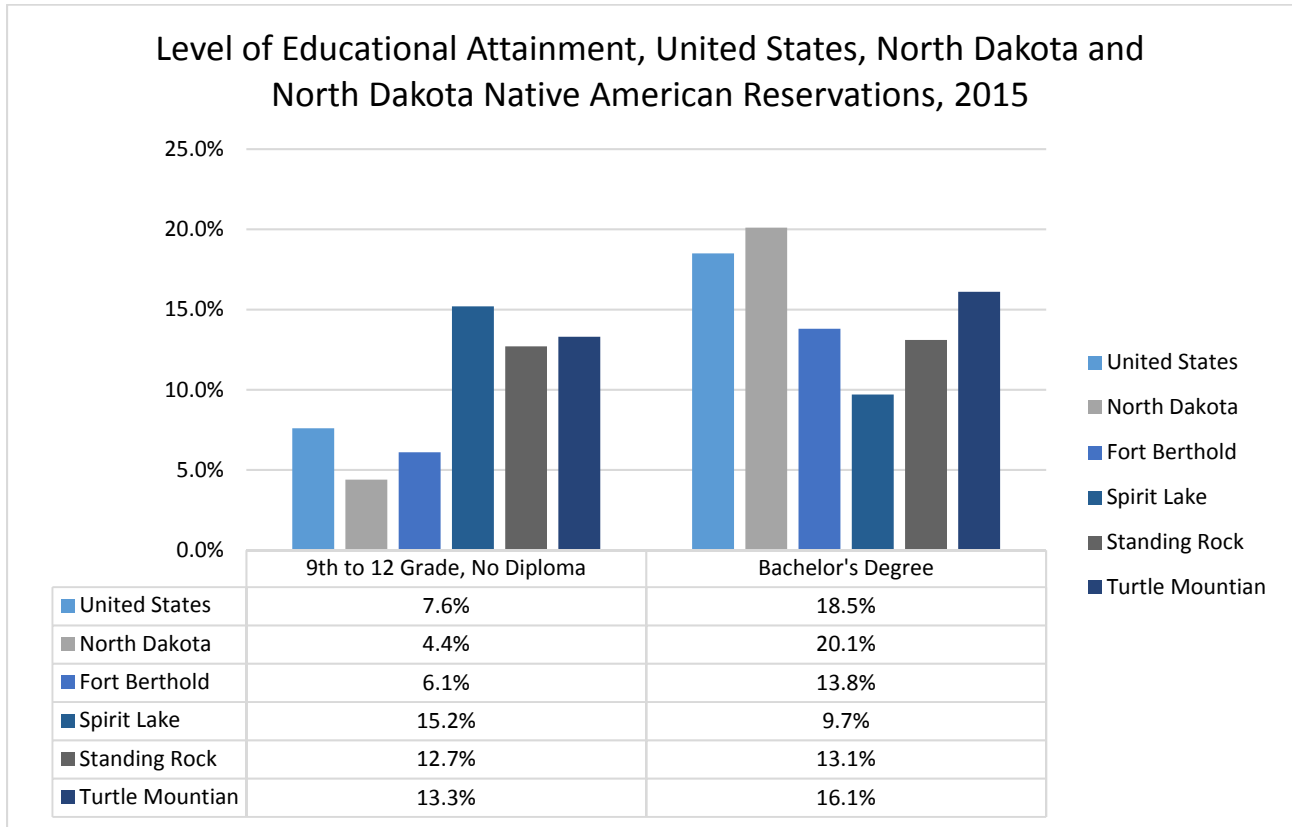


Figure 5. Level of Educational Attainment, North Dakota and Turtle Mountain Native American Reservation, 2015

Source: 2011-2015 U.S. Census American Community Survey, 2015

Level of Educational Attainment, by Degree Type, United States, North Dakota and North Dakota Native American Reservations, 2015

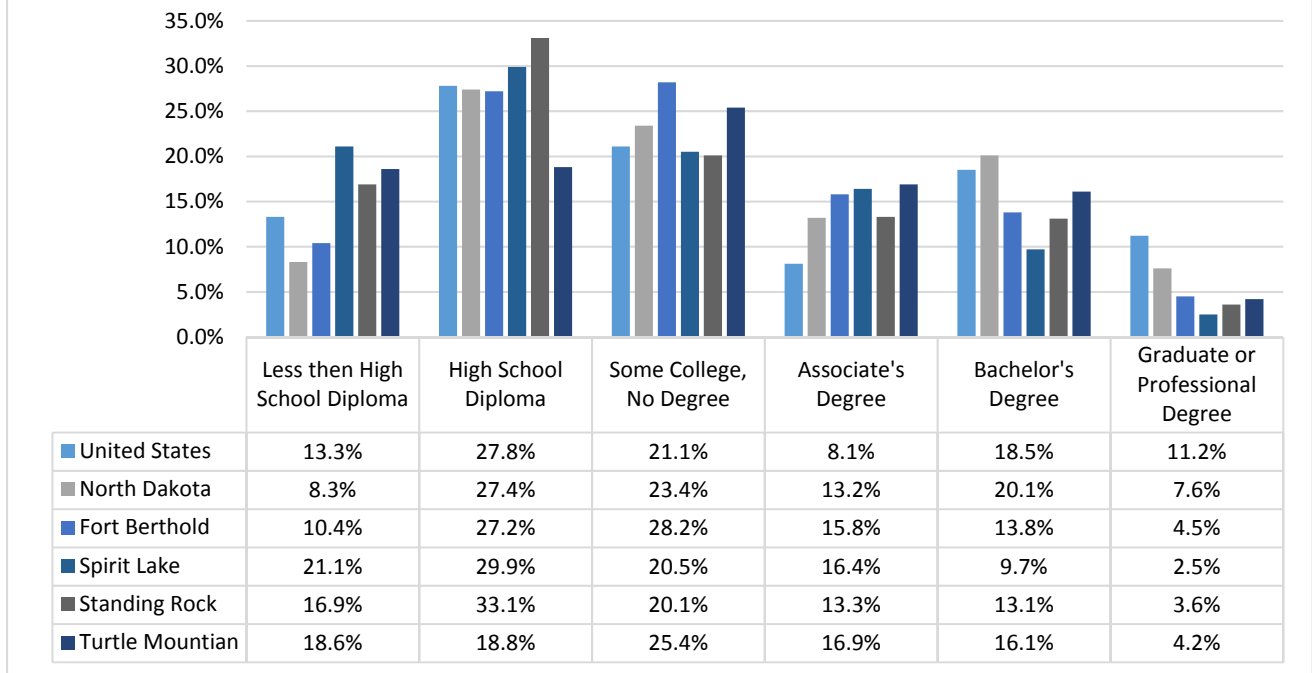


Figure 6. Level of Educational Attainment by Degree Type, North Dakota and North Dakota Native American Reservations, 2015

Source: 2011-2015 U.S. Census American Community Survey, 2015

High school graduation rates are lower on Native American reservations as well. The high school graduation rate for all Native American students in North Dakota in 2014-2015 was 60 percent compared to the overall statewide graduation rate of 87 percent (Figure 7) (North Dakota Department of Public Instruction, 2015). The dropout rate for all Native American students statewide was 34 percent compared to 10 percent for all students statewide. The high School graduation rate for Native American students at the Belcourt School District in 2014-2015 was 66 percent and the dropout rate was 30 percent (ND Department of Public Instruction, 2015).

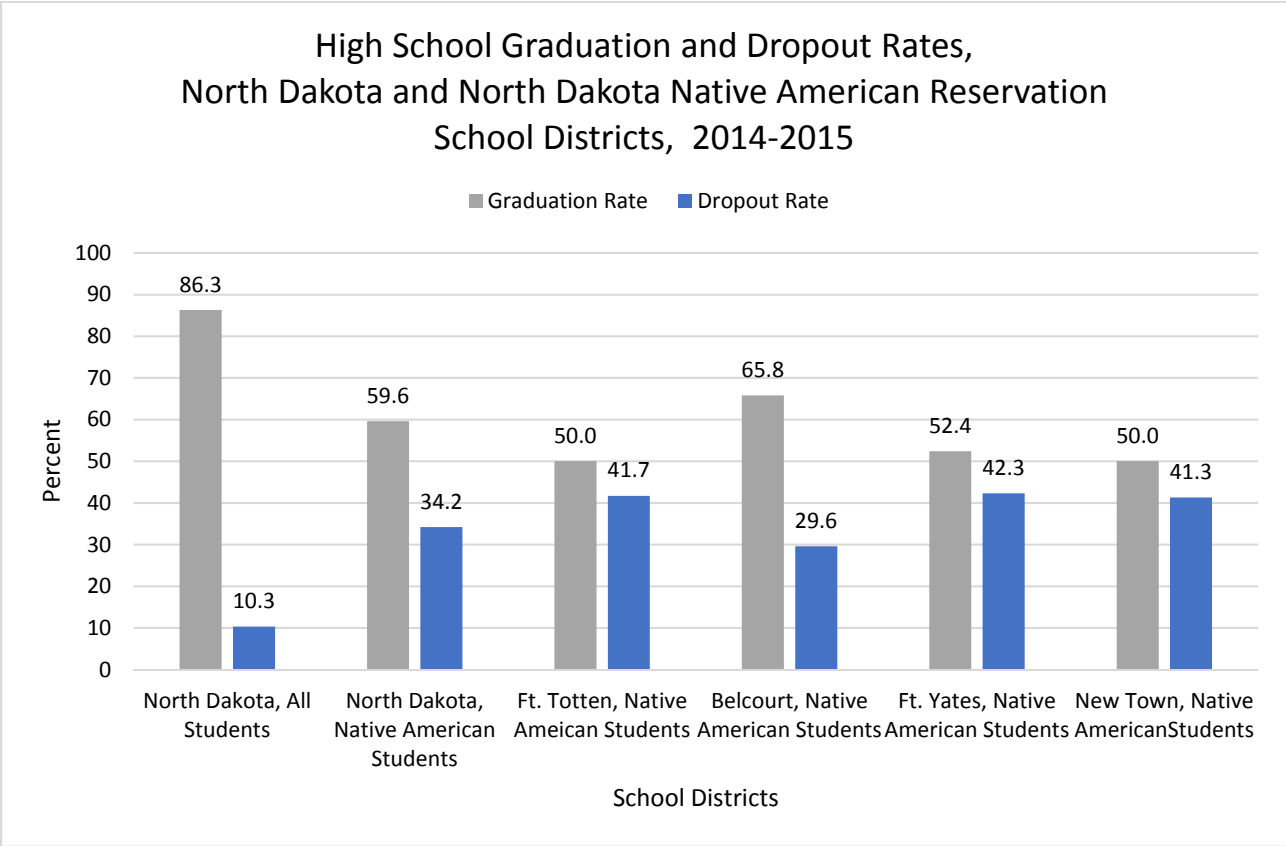


Figure 7. High School Graduation and Dropout Rates, North Dakota and School Districts Where Tribal Colleges are Located, 2014-2015

Source: North Dakota Department of Public Instruction, 2015

The social and economic benefits that result from educational attainment are well documented. Higher education results in increased earnings and improved social conditions. Improved economic and social conditions from post-secondary education enhance quality of life and the social and economic benefits of a college education are passed onto subsequent generations. While the value of a post-secondary degree specific to TMCC were beyond the scope of this study, published research and statistics clearly illustrate positive social and economic benefits of higher education. The state’s Tribal Colleges and TMCC serves an important role in improving economic and social conditions on Native American reservations and in North Dakota communities through the delivery of post-secondary higher education.

Conclusions

The North Dakota Association of Tribal Colleges (NDATC) consists of five colleges located in North Dakota. One of those five colleges is the Turtle Mountain Community College (TMCC) that serves the Turtle Mountain Native American Reservation in Belcourt, North Dakota. In addition to providing cultural-based education opportunities for Native Americans, Tribal Colleges also have an economic impact as a result of college operations. Student spending also contributes to the economic effects related to the Tribal Colleges. In addition to economic impacts, the higher education opportunities provided by TMCC has both positive social and economic benefits.

Turtle Mountain Community College direct expenditures into the North Dakota economy were \$14.9 million in FY2016. The college employed 111 full-time workers and 41 part-time workers. Total economic impact for TMCC was \$44.1 million in FY2016, which included \$29.2 million of secondary impacts. Business activity in the *Households* sector, which measures economy-wide personal income, was estimated to be \$18.0 million in FY2016. Considering the largest expenditure category for the college was for wages and salaries this result was not unexpected. Retail trade activity attributed to TMCC's expenditures were estimated to be \$11.8 million in FY2016. Business activity generated by TMCC's expenditures would produce \$548,000 in sales and use taxes, and \$270,000 in personal income taxes. In addition to the 111 full-time and 41 part-time jobs at Turtle Mountain Community College, the level of business activity associated with college expenditures would support 103 FTE secondary (indirect and induced) jobs.

Student expenditures for living expenses also have economic effects. A total of 555 students were enrolled on a full-time or part-time basis during the 2015-2016 academic year for a total of 480 FTE students. Expenditures by the 448 FTE (224 FTE per semester) students at Turtle Mountain Community College for personal items, recreation, books, supplies, and room and board was \$4.6 million for the 2015-2016 academic year. Total economic impacts (direct plus secondary) from student spending was \$11.4 million; secondary effects totaled \$6.8 million. Impacts were the greatest in the *Retail Trade* sector (\$5.1 million) due to the high percentage of student spending for retail trade items. The next highest level of business activity was in the *Households* sector (economy-wide personal income) with \$2.8 million in total impacts. This level of business activity would support 20 secondary jobs in various sectors of the North Dakota economy. Economic effects from student expenditures are in addition to those of Turtle Mountain Community College operations.

In addition to local economic impacts, social and economic benefits accrue to individuals with higher academic achievement. Previous studies have reported that college graduates have, healthier life styles, healthier children, increased job satisfaction, have shown decreased prejudice, enhanced knowledge of world affairs, and have enhanced social status. Many of these benefits are passed onto succeeding generations. Further college graduates have lower unemployment rates and higher annual incomes than those without a college degree. The national unemployment rate for high school graduates was 5.4 percent in 2015, nearly double the 2.8 percent rate for person with a Bachelor's degree. Higher income is also associated with educational attainment. In 2015, the median annual earnings in the United States for associated with a college degree was \$59,124, while median income for a high school degree was \$35,256, approximately 60 percent of earnings associated with a Bachelor's degree.

Currently in North Dakota there is considerable education disparity between the Native American population and the state population overall. Educational attainment is lower on Native American reservations than in North Dakota and the United States overall. Across nearly every level of education, educational attainment is lower on the Turtle Mountain Native American Reservation than state and national averages. Published research and statistics clearly illustrate positive social and economic benefits of higher education. The Tribal Colleges and TMCC serve an important role in improving economic and social conditions for people and communities on North Dakota Native American reservations and throughout North Dakota through the delivery of post-secondary higher education.

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