



# Accelerating Opportunity:

An Analysis of Dual  
Enrollment at South Dakota's  
Technical Institutes

October 2019



South Dakota Board of  
**Technical Education**

# Executive Summary

Since its inception, the High School Dual Credit Program (HSDC) has extended opportunities for South Dakota students to accumulate college credit while in high school. In 2018-19, the first cohort of students who had access to HSDC (2014-15) reached a common postsecondary program completion benchmark of 150 percent (i.e. a two-year associate degree completed in three-years). Reaching this completion benchmark creates opportunities for analysis, although limited, of HSDC for the South Dakota Board of Technical Education and four technical institutes.

The purpose of this analysis is to examine the relationship of dual enrollment and student retention, progression, and completion within the postsecondary technical education system in South Dakota. More specifically, three research questions were identified to guide the analysis:

1. Which students are engaging in dual enrollment?
2. What dual enrollment opportunities are students engaging in and to what extent?
3. What is the relationship between dual enrollment and postsecondary retention, progression, and completion?

The population of this study represents first-time students who graduated from a South Dakota high school after 2014 and subsequently matriculated at one of the four technical institutes in 2015, 2016, or 2017. In total, 3,732 students.

Key findings include:

- Students with 0.5 or more credits at matriculation:
  - o had higher rates of term-to-term and year-to-year retention;
  - o were more likely to make steady progress toward degree completion by annually completing more credits;
  - o were more likely to reach degree completion within 100 and 150 percent of normal time-to-degree.
- Lower socioeconomic status, first-generation, and racial/ethnic minority students are less likely to matriculate with credits.
- In addition to total cohort sizes steadily growing from 2015 to 2017, the number of average credits at matriculation per student also increased from 2.18 to 2.75 (+0.57).
- Students who completed one or both of their entry-level math and English general education requirements at matriculation were more likely to graduate in 100 and 150 percent of normal time-to-degree.
- Students matriculating with three or more credits had lower average total student loan amounts at time of completion than their peers matriculating with 0-2.5 credits.

The findings of this analysis support dual enrollment's role in affirming and accelerating a student's pathway to college and career readiness.

# Introduction

## What Is Dual Enrollment?

Dual enrollment is an opportunity for high school students to enroll in a college-level course offered through one of the four technical institutes or six public universities in South Dakota. When enrolled in a dual enrollment course, students are completing college-level coursework. Upon successful completion, the student receives college credit for the course. In most districts, students will receive both high school and college credits, but this is not true across all South Dakota districts.

Dual enrollment is often referred to as “dual credit;” however, there are key differences in South Dakota:

**Dual Credit:** College credit earned by a high school student enrolling in a course offered by a postsecondary institution and taught by a postsecondary instructor.

**Concurrent Credit:** College credit earned by a high school student enrolling in a course offered by his/her school district and taught by qualified school district personnel. While taught by school district personnel, the course’s curriculum is college-level and supervised by a postsecondary institution.

Championed by then Governor Dugaard, the Legislature in 2014 approved funding for the establishment of the High School Dual Credit Program (HSDC). Through HSDC, dual credit opportunities are available to South Dakota students, grades 11-12, at the rate of \$48.33 per credit (as of AY 2019-20). Students are responsible for the credit cost, textbooks, and related course materials.

## What Type Of Dual Enrollment Is Offered?

A diverse portfolio of dual enrollment opportunities is offered through the High School Dual Credit Program (HSDC) in South Dakota. The six public universities and four technical institutes in South Dakota can and do offer dual enrollment courses.

Most often, dual credit courses are offered online or on the physical campus of either an institute or university. In some occurrences, a technical institute or university establishes an agreement with a school district and the postsecondary faculty member will teach within the district’s brick-and-mortar building. However, this type of dual credit is not to be confused with concurrent credit, where qualified school district personnel teach a course supervised by a postsecondary institution.

The scope of available dual enrollment opportunities through HSDC is diverse. A comprehensive dashboard of all dual enrollment courses can be accessed at: <https://apps.sd.gov/de68dual/index.html>

# Introduction

## What the Research Tells Us

In a 2006 publication by the U.S. Department of Education, “The Toolbox Revisited: Paths to Degree Completion from High School Through College,” author Clifford Adelman examines a variety of factors and their relationship with retention, progression, and completion in postsecondary education. Adelman writes:

Less than 20 credits by the end of the first calendar year of enrollment (no matter in what term one started, whether summer, fall, winter, spring) is a serious drag on degree completion... It is all the more reason to begin the transition process in high school with expanded dual enrollment programs offering true postsecondary course work so that students enter higher education with a minimum of 6 additive credits to help them cross that 20-credit line. Six is good, 9 is better, and 12 is a guarantee of momentum (p. xx)<sup>1</sup>.

Adelman’s research in this area formed the foundation of this analysis. Specifically resonant is the last sentence in the above quote: “Six is good, 9 is better, and 12 is a guarantee of momentum.” The variables in the subsequent sections were explored to test if the same held true within the four technical institutes.

**“Six is good,  
9 is better, and  
12 is a guarantee  
of momentum.”**

<sup>1</sup> Adelman, C. (2006). The toolbox revisited: Paths to degree completion from high school through college. Retrieved from <https://www2.ed.gov/rschstat/research/pubs/toolboxrevisit/toolbox.pdf>

# Introduction

## Research Process

In December 2018, South Dakota Board of Technical Education System Office began coordination of this analysis with institutional researchers at each of the four technical institutes. A codebook was developed, and from there, institutional researchers began querying the necessary data through the System's student information management system, Jenzabar. The queried data was provided to the System Office.

The population of this study represents first-time students who graduated from a South Dakota high school and subsequently enrolled at one of the four technical institutes in 2015, 2016, or 2017. Students graduating prior to 2015 were excluded, as the High School Dual Credit Program began during the 2014/15 academic year.

For the purposes of this analysis, the total number of credits meeting postsecondary program of study requirements at matriculation was analyzed. When data were queried, there was no differentiation on the source of the credits. A student may have completed credits at a public university, technical institute, home school district, or a combination of all three.

The number of credits a student accumulated while in high school were coded within six ranges: 0, 0.5-2.5, 3-5.5, 6-8.5, 9-11.5, 12+. For example, if a student entered with four credits, s/he was coded within the "3-5.5" range.

The figures and tables represented in the subsequent pages are summaries of the data. This type of analysis is referred to as "descriptive statistics" in research design. No weighting has been applied.

## Limitations Of Analysis

The purpose of this analysis is to examine dual enrollment and its early relationship to the three research questions articulated in the executive summary. However, there are undeniable limitations. Early relationship should be emphasized and noted as one reviews this report. Only one cohort, equaling 1,088 students who matriculated at a postsecondary technical institute in South Dakota in 2015, forms the core population of this study when analyzing completion. As variables and data allow, two additional cohorts (2016, 2017) were integrated. While these additional cohorts provide a lens into early variables related to the research questions, it is not a holistic picture of the High School Dual Credit Program (HSDC) and should not be interpreted as such.

When a student enrolls at one of the four technical institutes, local admission and registrar professionals review the high school transcript and determine which completed secondary courses meet requirements in a student's postsecondary program of study. For the purposes of this study, only the total number of credits meeting postsecondary program of study requirements were analyzed. A student may have accumulated more credits in high school, but those credits may not have met postsecondary program of study requirements. For example, a student completes nine credits in history, but only three of those nine were required for his postsecondary program of study. In this example, the other six credits not relevant to his postsecondary program of study were not factored.

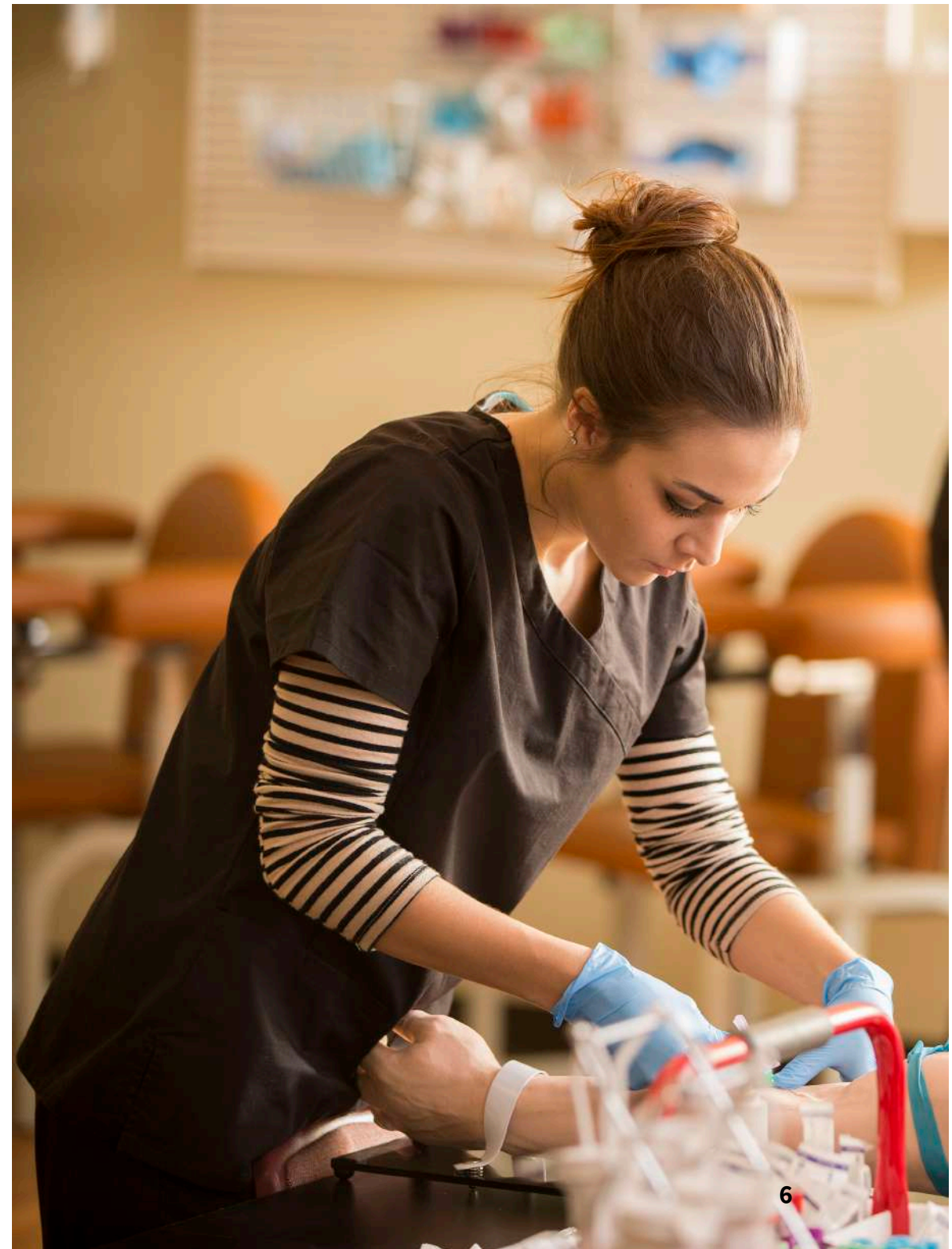
Lastly, in reviewing the data, it is important to note there are factors beyond dual enrollment influencing results. As in all research, limitations exist, and we cannot fully determine whether HSDC is directly causing these results. However, trends can be identified and relational influences hypothesized.

# Introduction

## Key Terms and Definitions

In reviewing the data to follow, the following terms may be helpful:

- **Matriculation:** The point in which a student begins his/her postsecondary program of study. For the purposes of this study, only students who matriculated in Fall semesters were analyzed.
- **Credit Accumulation:** The number of credits a student completed.
- **Credits:** In the majority of the tables, the very left column is labeled “Credits.” This column represents the coded range of credits a student has completed at time of matriculation.
- **Cohort:** A group of students matriculating within the same academic year.



# Dual Enrollment: Engagement

## Overview

This section examines the type of students engaging in dual enrollment through the following variables: first generation status; Pell-grant eligibility and expected family contribution; ACT test; race/ethnicity.

### Key Takeaways:

1. Students were more likely to accrue dual enrollment credits in high school if at least one of their parents or guardians attended college.
2. Students eligible for Federal Pell Grants were less likely to matriculate with incoming credits in comparison to their peers who were ineligible for Pell.
3. Students matriculating with 3 to 11.5 credits had two-point higher average ACT scores (20) than their peers matriculating with 0 to 2.5 credits (18). Students with 12+ credits had the highest average ACT score (21).
4. Comparative analyses between race/ethnicity subgroups are challenging when size variances are wide. However, the data do reflect differences between subgroups. When examining students matriculating with zero incoming credits, differences between subgroups ranged from 59 to 93 percent.

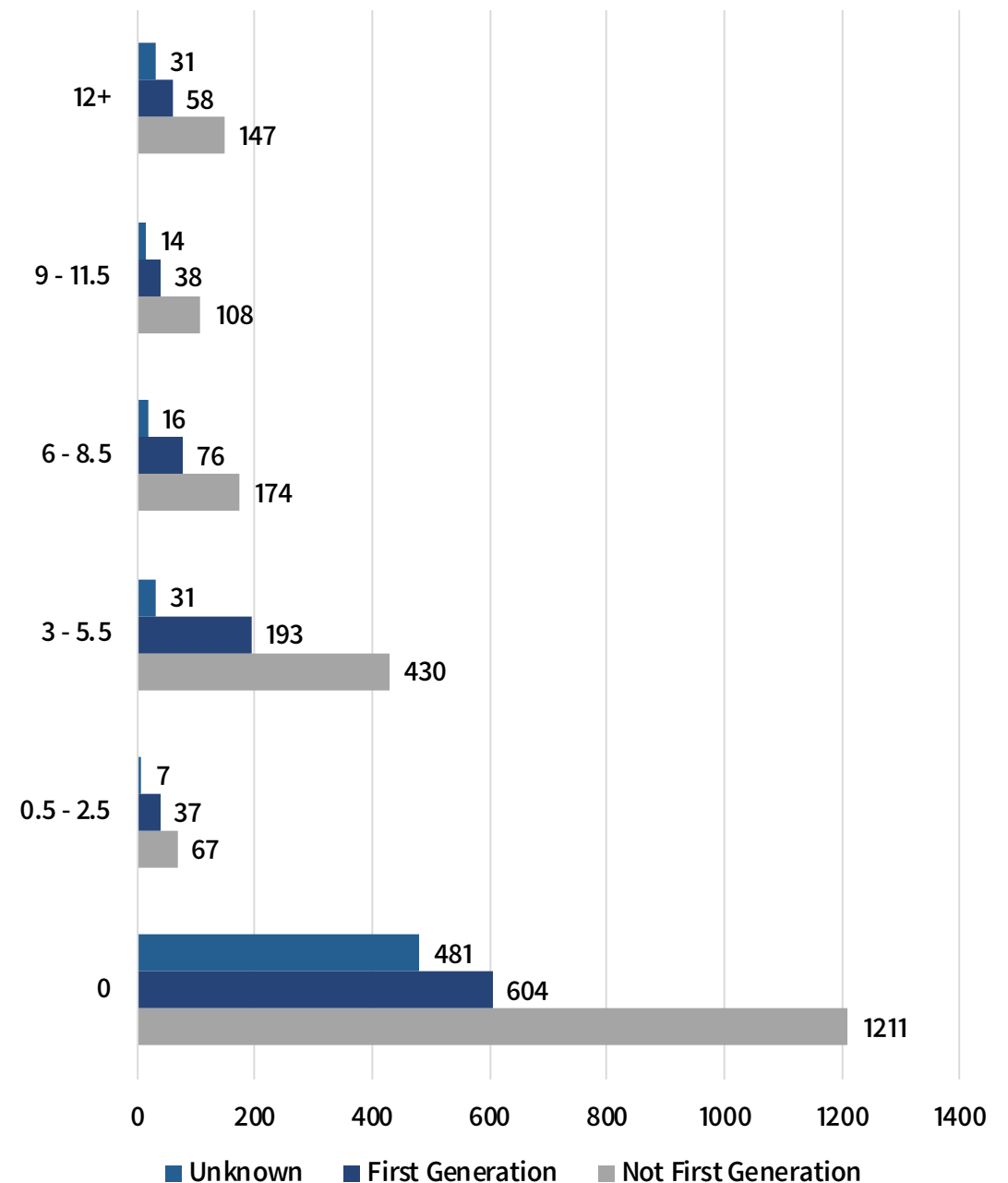
## First Generation Status

Students are more likely to accrue dual enrollment credits in high school if at least one parent or guardian attended college.

A gap exists between first generation students and their not-first generation peers when considering credits accrued prior to matriculation. For example, of the students who matriculated with 3-5.5 credits (n=654), first generation students represent 30 percent while not-first generation students represent 66 percent – a 36 percent difference.

The gap is wider for students matriculating with 9-11.5 credits (n=160), of which 68 percent were not-first generation and 24 percent were first generation. This represents a 44 percentage difference.

Of the 3,723 students in this analysis, 57 percent are children of parents or guardians who attended college, 27 percent are first generation, and 16 percent are unknown.

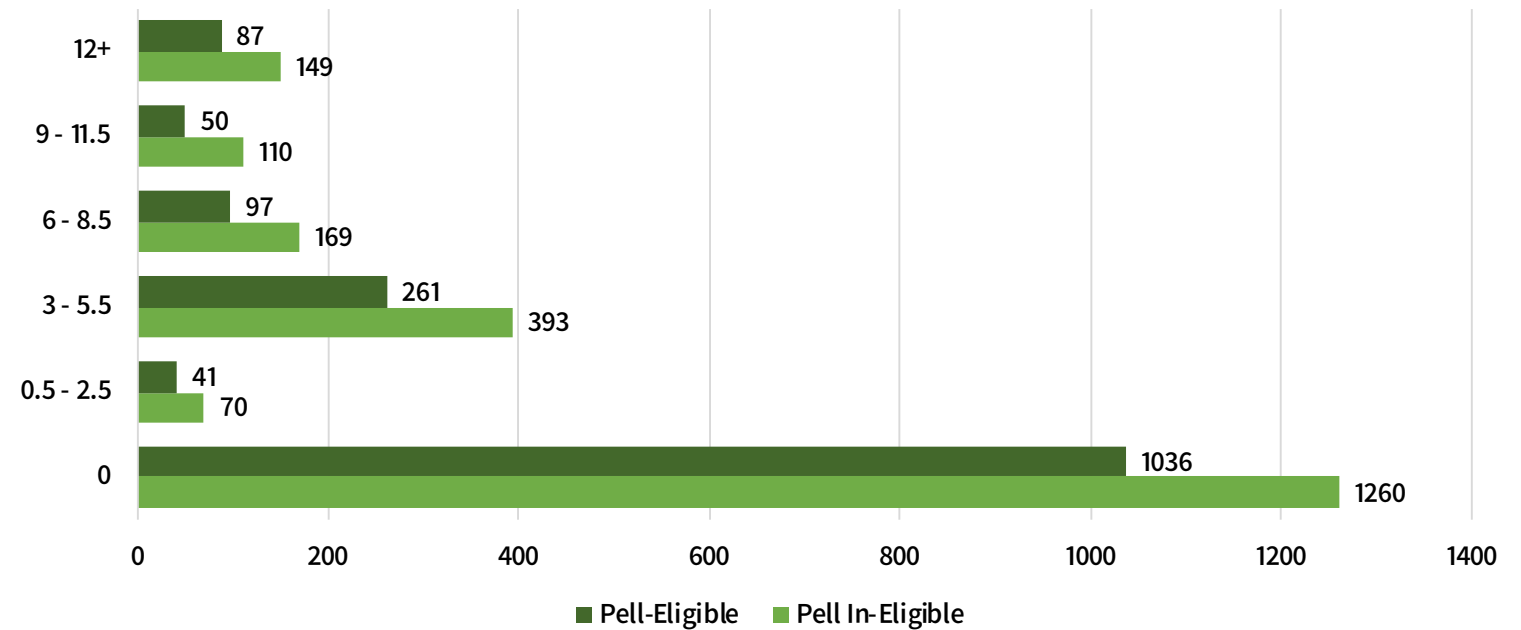




## Pell And Expected Family Contribution

Students eligible for Federal Pell Grants were less likely to matriculate with credits in comparison to their peers who were ineligible for Pell.

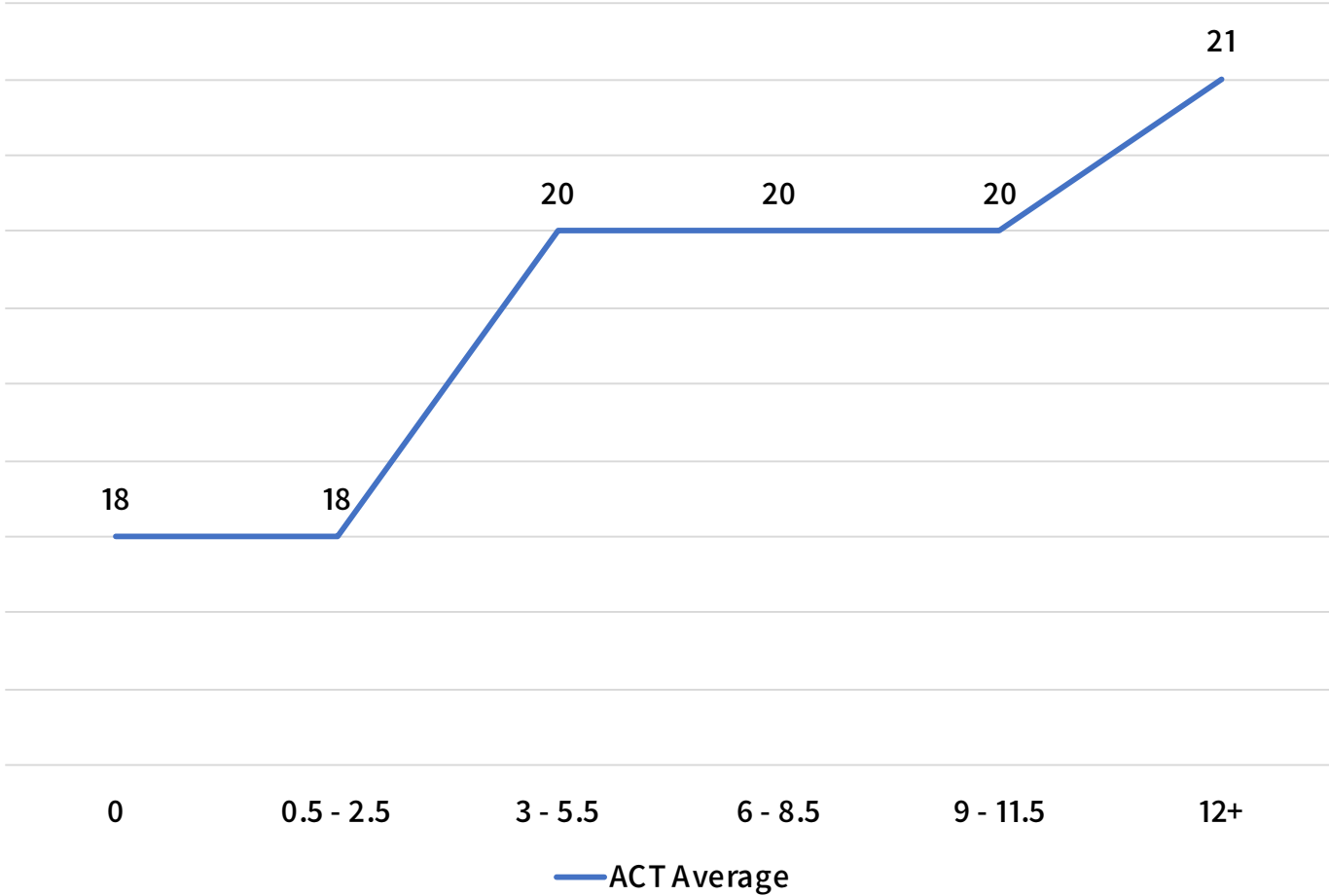
Out of the 3,723 students in this analysis, 1,427 had 0.5 or more credits upon matriculation. In total, Pell-eligible students represent 38 percent of this population while Pell-ineligible students represent 62 percent.



Credits	Total Students	Pell-Ineligible			Pell-Eligible		
		Students	%	Average EFC	Students	%	Average EFC
0	2296	1260	55%	\$ 20,596.30	1036	45%	\$ 2,534.34
0.5 - 2.5	111	70	63%	\$ 21,612.93	41	37%	\$ 2,845.02
3 - 5.5	654	393	60%	\$ 25,255.28	261	40%	\$ 3,120.54
6 - 8.5	266	169	64%	\$ 27,525.55	97	36%	\$ 2,974.49
9 - 11.5	160	110	69%	\$ 19,982.11	50	31%	\$ 2,750.28
12+	236	149	63%	\$ 28,839.17	87	37%	\$ 3,159.59
<b>Total</b>	<b>3723</b>	<b>2151</b>	<b>58%</b>	<b>\$ 22,503.15</b>	<b>1572</b>	<b>42%</b>	<b>\$ 2,708.45</b>

# ACT Test

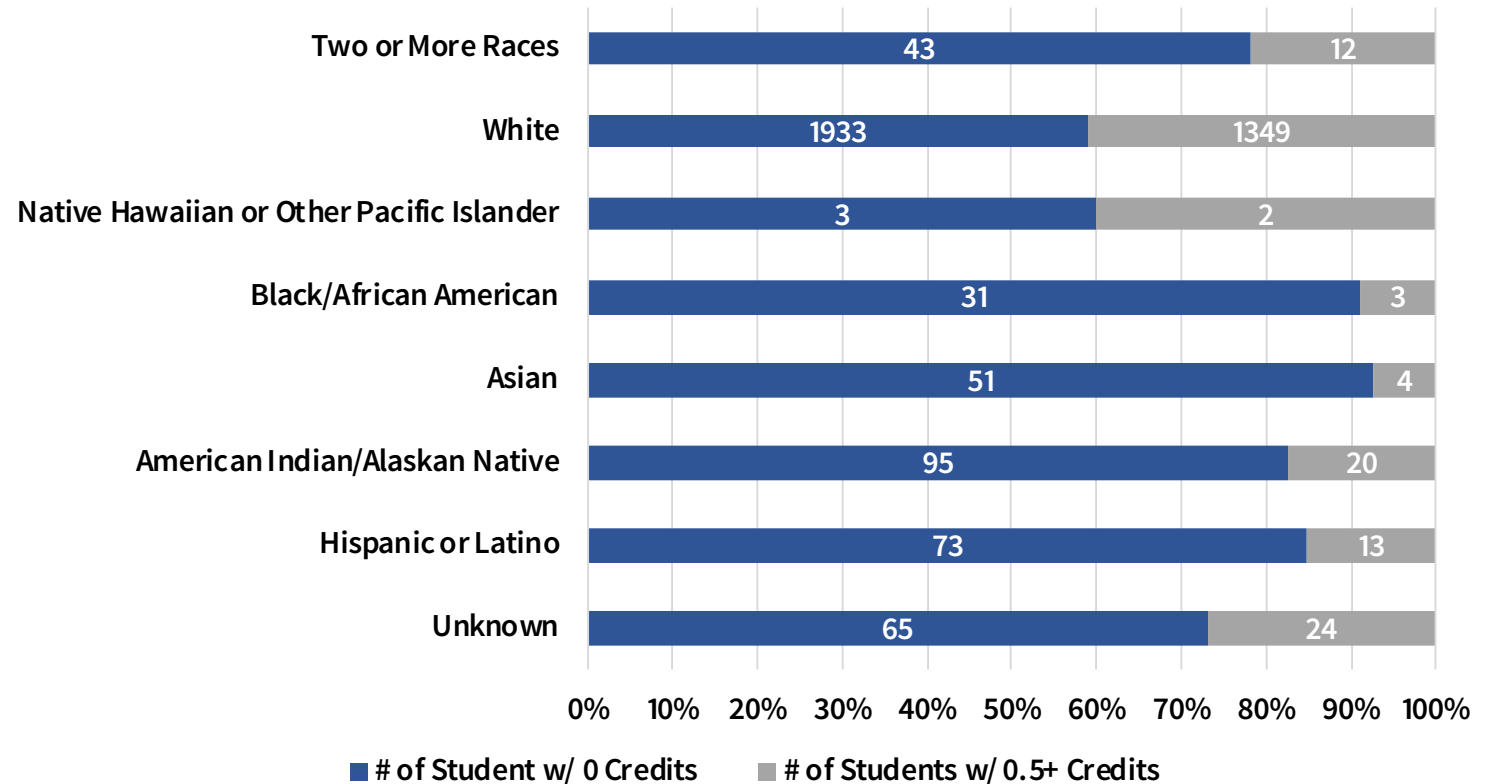
Students matriculating with 3 to 11.5 credits had two-point higher average ACT scores (20) than their peers matriculating with 0 to 2.5 credits (18). Students with 12+ credits had the highest average ACT score (21).



## Race And Ethnicity

Comparative analyses between race/ethnicity subgroups are challenging when size variances are wide. However, the data do reflect differences between subgroups.

When examining students matriculating with zero credits, differences between subgroups ranged from 59 to 93 percent.



Race/Ethnicity	Total Students	# of Student w/ 0 Credits	%	# of Students w/ 0.5+ Credits	%
Unknown	89	65	73%	24	27%
Hispanic or Latino	86	73	85%	13	15%
American Indian/Alaskan Native	115	95	83%	20	17%
Asian	55	51	93%	4	7%
Black/African American	34	31	91%	3	9%
Native Hawaiian or Other Pacific Islander	5	3	60%	2	40%
White	3282	1933	59%	1349	41%
Two or More Races	55	43	78%	12	22%

# Dual Enrollment: Cohorts, Entry— Level Course Completions

## Overview

This section of the brief examines dual enrollment by cohort and entry-level course completions.

### Key Takeaways:

1. In addition to total cohort sizes steadily growing from 2015 to 2017, the number of average credits at matriculation per student also increased from 2.18 to 2.75 (+0.57).
2. For the most part, students matriculated with more credits; however, the number of students matriculating with zero credits also increased from 2015 to 2017.
3. With each cohort, more students matriculated with entry-level math and English requirements completed. Across all three cohorts, 10 percent of students completed their English requirement, 24 percent completed math requirement, and six percent completed both their math and English requirements.

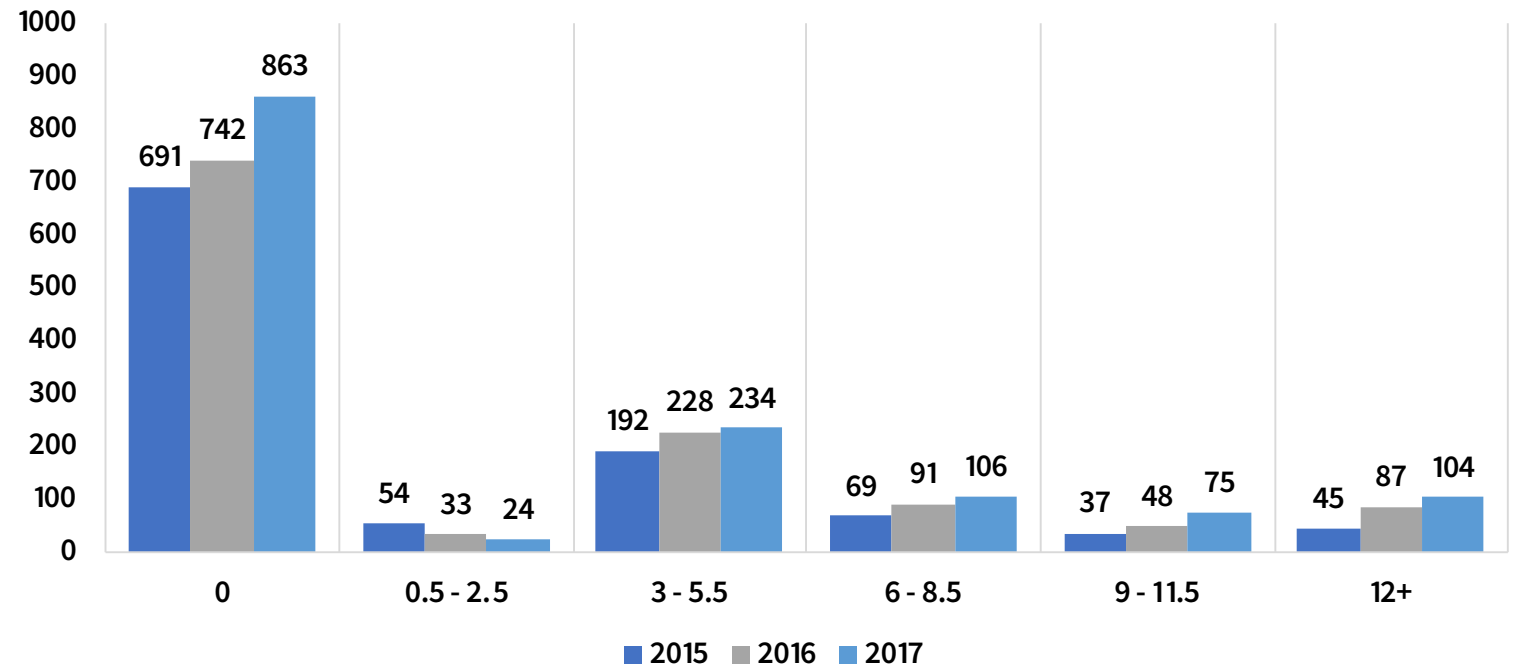
## **Cohorts: Total and Average Credits**

In addition to total cohort sizes comprised of South Dakota students steadily growing across the postsecondary technical education system from 2015 to 2017, reflecting 318 additional students and a 29-percentage increase, the number of average credits at matriculation per student also increased from 2.18 to 2.75 (+0.57).

<b>Cohort</b>	<b>Total Students</b>	<b>Total Credits</b>	<b>Average Credits</b>
<b>2015</b>	1088	2377	2.18
<b>2016</b>	1229	3315	2.70
<b>2017</b>	1406	3872	2.75
<b>Total</b>	3723	9563	2.57

## Cohorts: Year and Credit Range

In most credit ranges, students matriculated with more credits with each cohort; however, the number of students who matriculated with zero credits also increased from 2015 to 2017.



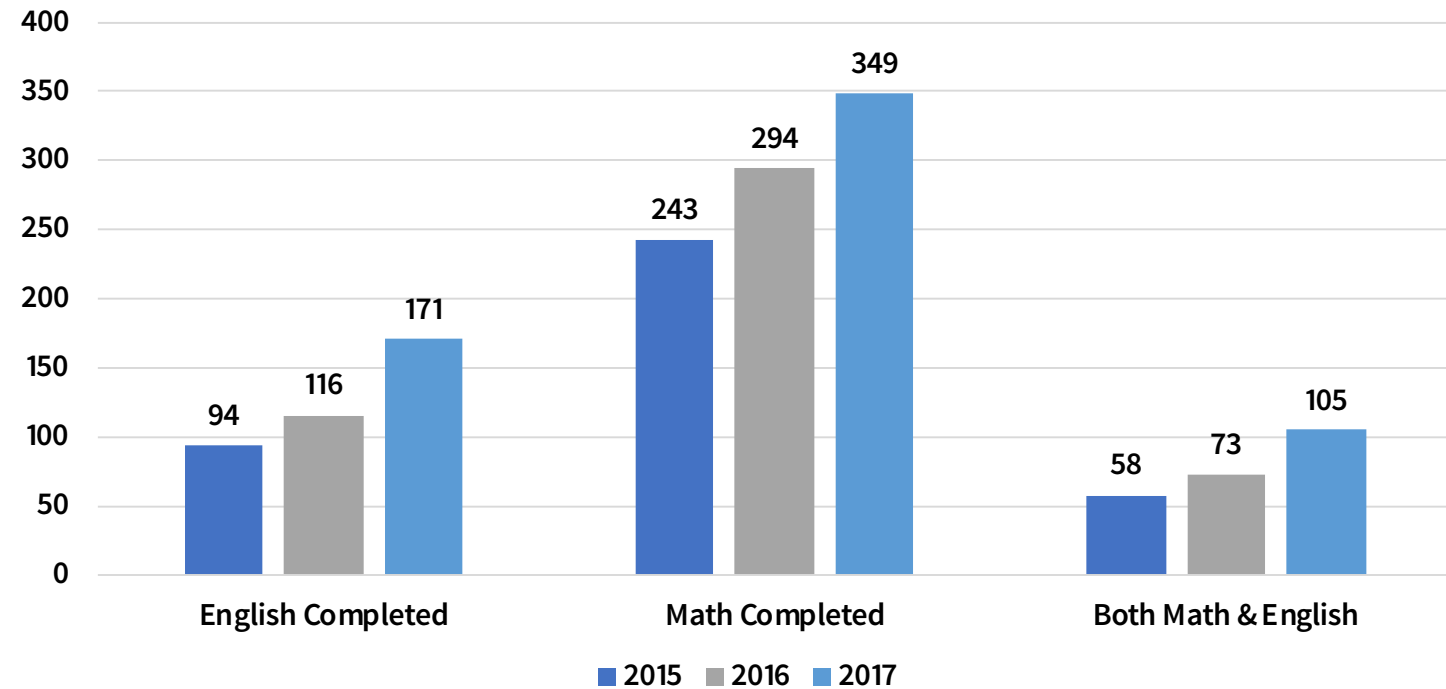
Credits	2015	2016	2017	Total
0	691	742	863	2296
0.5 - 2.5	54	33	24	111
3 - 5.5	192	228	234	654
6 - 8.5	69	91	106	266
9 - 11.5	37	48	75	160
12+	45	87	104	236
Total	1088	1229	1406	3723

## Entry-Level Course Completion: Math and English

Entry-level general education requirements in math and English can be a significant barrier for underprepared students. Therefore, completing these requirements prior to matriculation can be advantageous for accelerating a student's progression through his/her program of study, minimizing remediation, and affirming a college-going identity.

With each cohort, more students matriculated with entry-level math and English requirements completed.

The following data reflect students from all three cohorts and their respective completion rates in math, English, and both math and English general education requirements at matriculation.



Cohort	Total Students	Eng. Completed	%	Math Completed	%	Both Math & Eng.	%
2015	1088	94	9%	243	22%	58	5%
2016	1229	116	9%	294	24%	73	6%
2017	1406	171	12%	349	25%	105	7%
Total	3723	381	10%	886	24%	236	6%

# Dual Enrollment: Retention, Progression, and Completion

## Overview

This section of the brief examines dual enrollment and retention, progression, and completion outcomes.

### Key Takeaways:

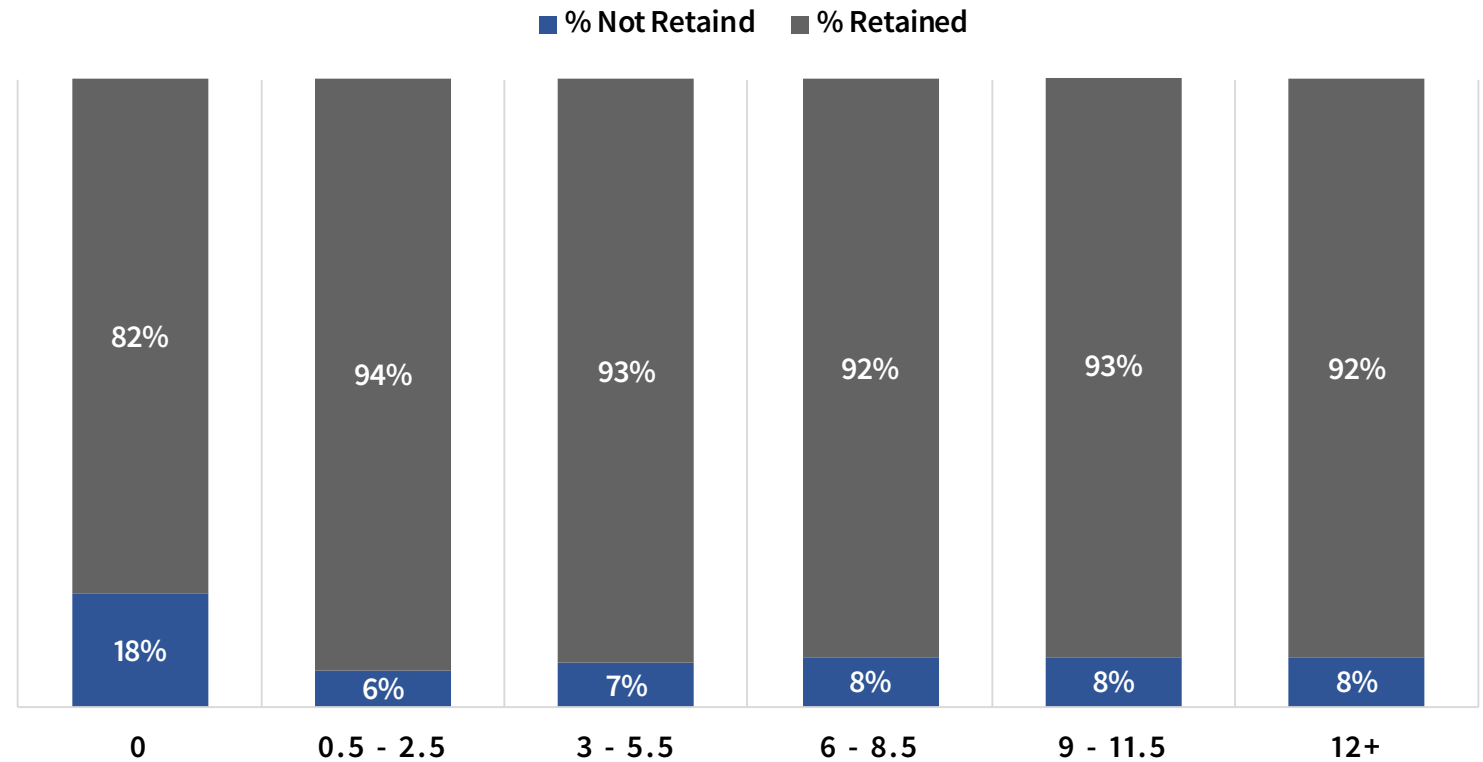
1. Term 1 to Term 2 retention rates for students matriculating with at least 0.5 credits ranged from 92-94 percent.
2. Year 1 to Year 2 retention and graduation rates for students matriculating with at least 0.5 credits ranged from 81-88 percent.
3. Students matriculating with 0.5 or more credits were more likely to make steady progress toward degree completion by annually completing more credits.
4. Students matriculating with 0.5 or more credits were more likely to complete at 100 and 150 percent of normal time-to-degree.
5. Students matriculating with more than three credits had lower average total student loan amounts at time of degree completion than their peers who matriculated with 0-2.5 credits.



## Retention: Term 1 to Term 2

Students most likely to be retained from Term 1 to Term 2 were students who matriculated with at least 0.5 credits. The postsecondary technical education system boasts strong term-to-term retention rates for all students; however, rates are especially high (92-94 percent) for students who matriculate with 0.5 or more credits.

Note: Term 1 to Term 2 is defined as fall to spring academic terms.

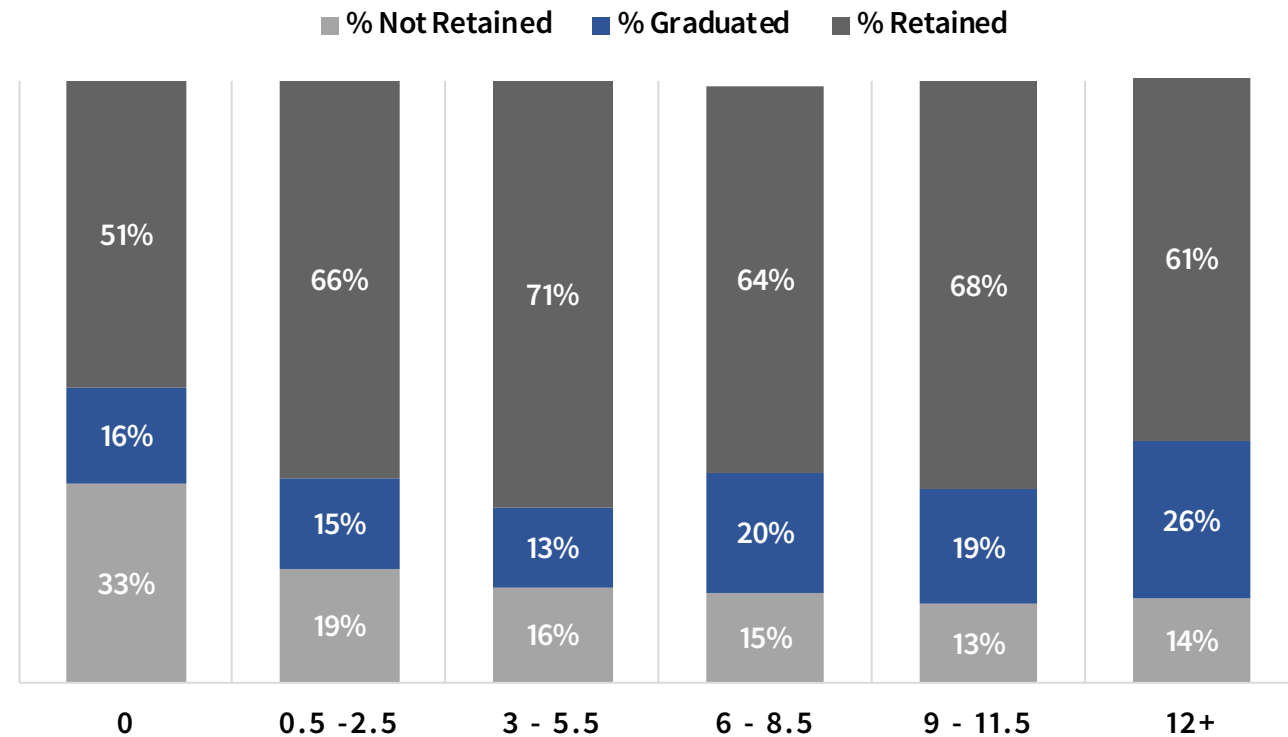


Credits	Total Students	Not Retained	%	Retained	%
0	2296	407	18%	1889	82%
0.5 - 2.5	111	7	6%	104	94%
3 - 5.5	654	48	7%	606	93%
6 - 8.5	266	20	8%	246	92%
9 - 11.5	160	12	8%	148	93%
12+	236	20	8%	216	92%
Total	3723	514	14%	3209	86%

## Retention/Graduation: Year 1 to Year 2

Students most likely to be retained or graduate from Year 1 to Year 2 were students who matriculated with at least 0.5 credits. In comparison to students matriculating with zero, students with 0.5 or more credits at matriculation were 14 to 21 percentage points more likely to be retained or graduate from Year 1 to Year 2.

Note: Year 1 to Year 2 is defined as fall to fall academic terms. Various academic programs are shorter than a fall to fall time span, such as certificate or diploma programs.



Credits	Total Students	Not Retained	%	Graduated	%	Retained	%
0	2289	752	33%	365	16%	1172	51%
0.5 - 2.5	111	21	19%	17	15%	73	66%
3 - 5.5	654	106	16%	86	13%	462	71%
6 - 8.5	266	41	15%	54	20%	171	64%
9 - 11.5	160	20	13%	31	19%	109	68%
12+	236	32	14%	61	26%	143	61%
<b>Total</b>	<b>3716</b>	<b>972</b>	<b>26%</b>	<b>614</b>	<b>17%</b>	<b>2130</b>	<b>57%</b>

## Progression: Credit Accumulation

Students matriculating with 0.5 or more credits were more likely to make steady progress toward degree completion by annually completing more credits than their peers who matriculated with zero credits.

Note: Average Completed Credits, Yr. 1, Cohorts: 2015, 2016, 2017

Credits	Total Students	Avg. Completed Credits, Yr. 1
0	2296	28
0.5 - 2.5	111	35
3 - 5.5	654	35
6 - 8.5	266	38
9 - 11.5	160	41
12+	236	46
Total	3723	32

## Progression: Credit Accumulation

Students matriculating with 0.5 or more credits were more likely to make steady progress toward degree completion by annually completing more credits than their peers who matriculated with zero credits.

Note: \*Average Completed Credits, Years 1-3; Cohort: 2015. \*\*Students may be enrolled in more than one academic program and/or change their major. Therefore, “Avg. Completed Credits” in Year 2 and Year 3 does not always imply excess credit accumulation.

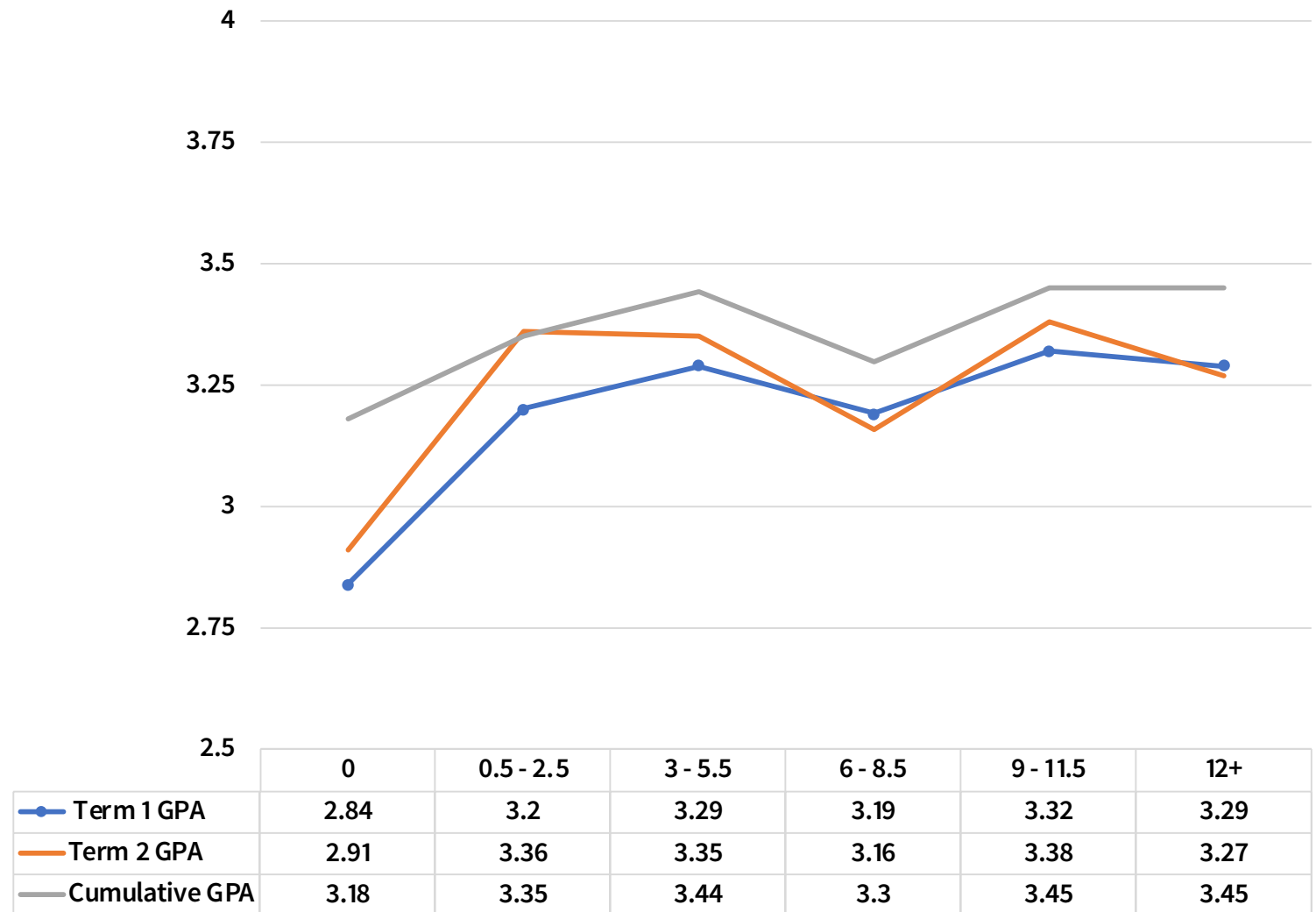
Credits	Total Students	Avg. Completed Credits, Yr. 1	Avg. Completed Credits, Yr. 2	Avg. Completed Credits, Yr. 3
0	691	29	64	72
0.5 - 2.5	54	36	67	80
3 - 5.5	192	37	70	78
6 - 8.5	69	38	69	81
9 - 11.5	37	41	71	83
12+	45	46	71	88
Total	1088	33	66	76

## Progression: Term and Cumulative Program GPA

Students matriculating with zero credits had the lowest average term and cumulative program GPA.

There is not a significant variance of credits at matriculation and cumulative program GPA.

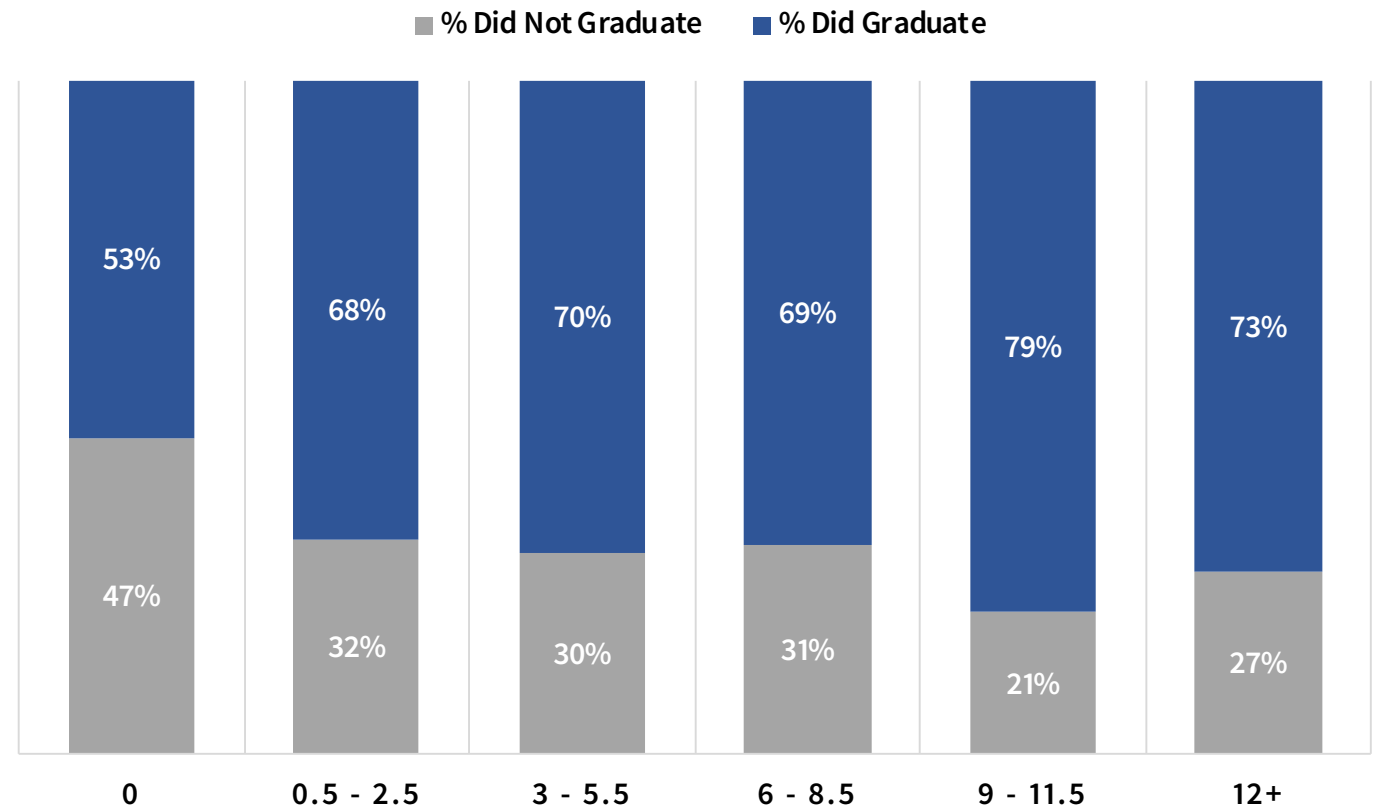
Note: These data represent Cohort 2015 only.



## Completion: Time To Degree, 100 Percent

Students matriculating with at least 0.5 credits were more likely to complete at 100 percent of normal time-to-degree (i.e. a two-year associate degree program in two-years from matriculation to completion).

Note: \*These data reflect students who matriculated in 2015 at a full-time status.  
\*\*Students pursuing dual programs may delay graduation until both requirements are completed, and these “double majors” have not been filtered.



Credits	Total Students	Did Not Graduate	%	Did Graduate	%
0	680	322	47%	358	53%
0.5 - 2.5	53	17	32%	36	68%
3 - 5.5	191	57	30%	134	70%
6 - 8.5	68	21	31%	47	69%
9 - 11.5	33	7	21%	26	79%
12+	41	11	27%	30	73%
Total	1066	435	41%	631	59%

## Completion: Time To Degree, 100 Percent and Entry Level Course Completion

The following tables reflect 100 percent time-to-degree completion rates for students who, at time of matriculation, had completed entry-level course requirements for math, English, and both math and English.

Note: \*These data reflect students who matriculated in 2015 at a full-time status.

\*\*Students pursuing dual programs may delay graduation until both requirements are completed, and these “double majors” have not been filtered in the table below.

Math Completed at Matriculation

Credits	Total Students	Did Not Graduate	%	Did Graduate	%
3 - 5.5	138	46	33%	92	67%
6 - 8.5	41	10	24%	31	76%
9 - 11.5	27	4	15%	23	85%
12+	31	6	19%	25	81%
<b>Total</b>	<b>239</b>	<b>68</b>	<b>28%</b>	<b>171</b>	<b>72%</b>

English Completed at Matriculation

Credits	Total Students	Did Not Graduate	%	Did Graduate	%
0.5 - 2.5	1	*	*	1	100%
3 - 5.5	15	2	13%	13	87%
6 - 8.5	28	10	36%	18	64%
9 - 11.5	21	2	10%	19	90%
12+	25	7	28%	18	72%
<b>Total</b>	<b>91</b>	<b>22</b>	<b>24%</b>	<b>69</b>	<b>76%</b>

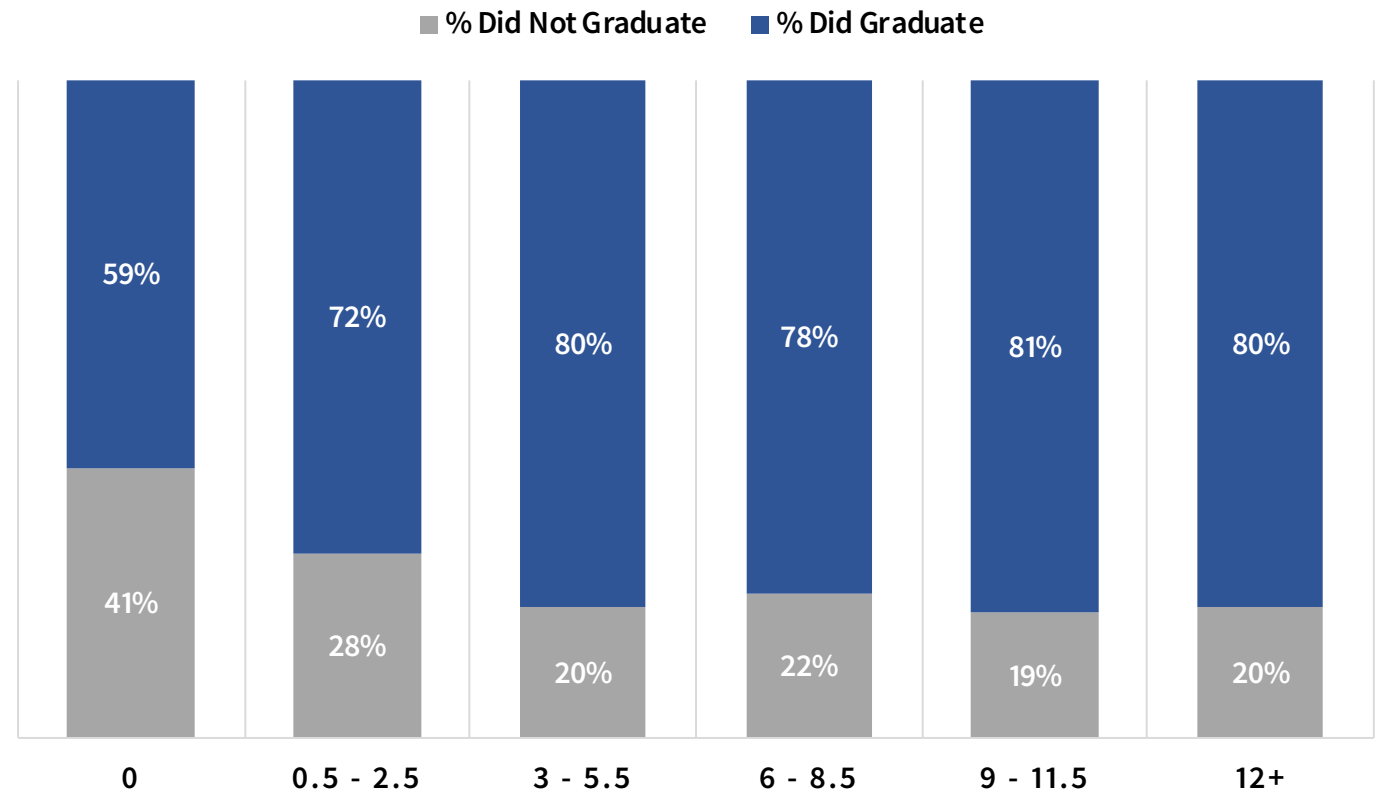
Math and English Completed at Matriculation

Credits	Total Students	Did Not Graduate	%	Did Graduate	%
6 - 8.5	13	4	31%	9	69%
9 - 11.5	18	1	6%	17	94%
12+	23	6	26%	17	74%
<b>Total</b>	<b>55</b>	<b>12</b>	<b>22%</b>	<b>43</b>	<b>78%</b>

## Completion: Time To Degree, 150 Percent

Students matriculating with 0.5 or more credits were more likely to complete at 150 percent of normal time-to-degree (i.e. a two-year associate degree program in three-years from matriculation to completion).

Note: \*These data reflect students who matriculated in 2015 at both full- and part-time status. \*\*Students pursuing dual programs may delay graduation until both requirements are completed, and these “double majors” have not been filtered.



Credits	Total Students	Did Not Graduate	%	Did Graduate	%
0	691	286	41%	405	59%
0.5 - 2.5	54	15	28%	39	72%
3 - 5.5	192	39	20%	153	80%
6 - 8.5	69	15	22%	54	78%
9 - 11.5	37	7	19%	30	81%
12+	45	9	20%	36	80%
<b>Total</b>	<b>1088</b>	<b>371</b>	<b>34%</b>	<b>717</b>	<b>66%</b>



## Completion: Time To Degree, 150 Percent and Entry Level Course Completion

The following tables reflect 150 percent time-to-degree completion rates for students who, at time of matriculation, had completed entry-level course requirements for math, English, and both math and English.

Note: \*These data reflect students who matriculated in 2015 at both full- and part-time status. \*\*Students pursuing dual programs may delay graduation until both requirements are completed, and these “double majors” have not been filtered.

Math Completed at Matriculation

Credits	Total Students	Did Not Graduate	%	Did Graduate	%
0	2	1	50%	1	50%
3 - 5.5	138	29	21%	109	79%
6 - 8.5	41	7	17%	34	83%
9 - 11.5	30	4	13%	26	87%
12+	32	4	13%	28	88%
<b>Total</b>	<b>243</b>	<b>45</b>	<b>19%</b>	<b>198</b>	<b>81%</b>

English Completed at Matriculation

Credits	Total Students	Did Not Graduate	%	Did Graduate	%
0.5 - 2.5	1	*	*	1	100%
3 - 5.5	15	2	13%	13	87%
6 - 8.5	28	8	29%	20	71%
9 - 11.5	24	3	13%	21	88%
12+	25	5	20%	20	80%
<b>Total</b>	<b>94</b>	<b>18</b>	<b>19%</b>	<b>76</b>	<b>81%</b>

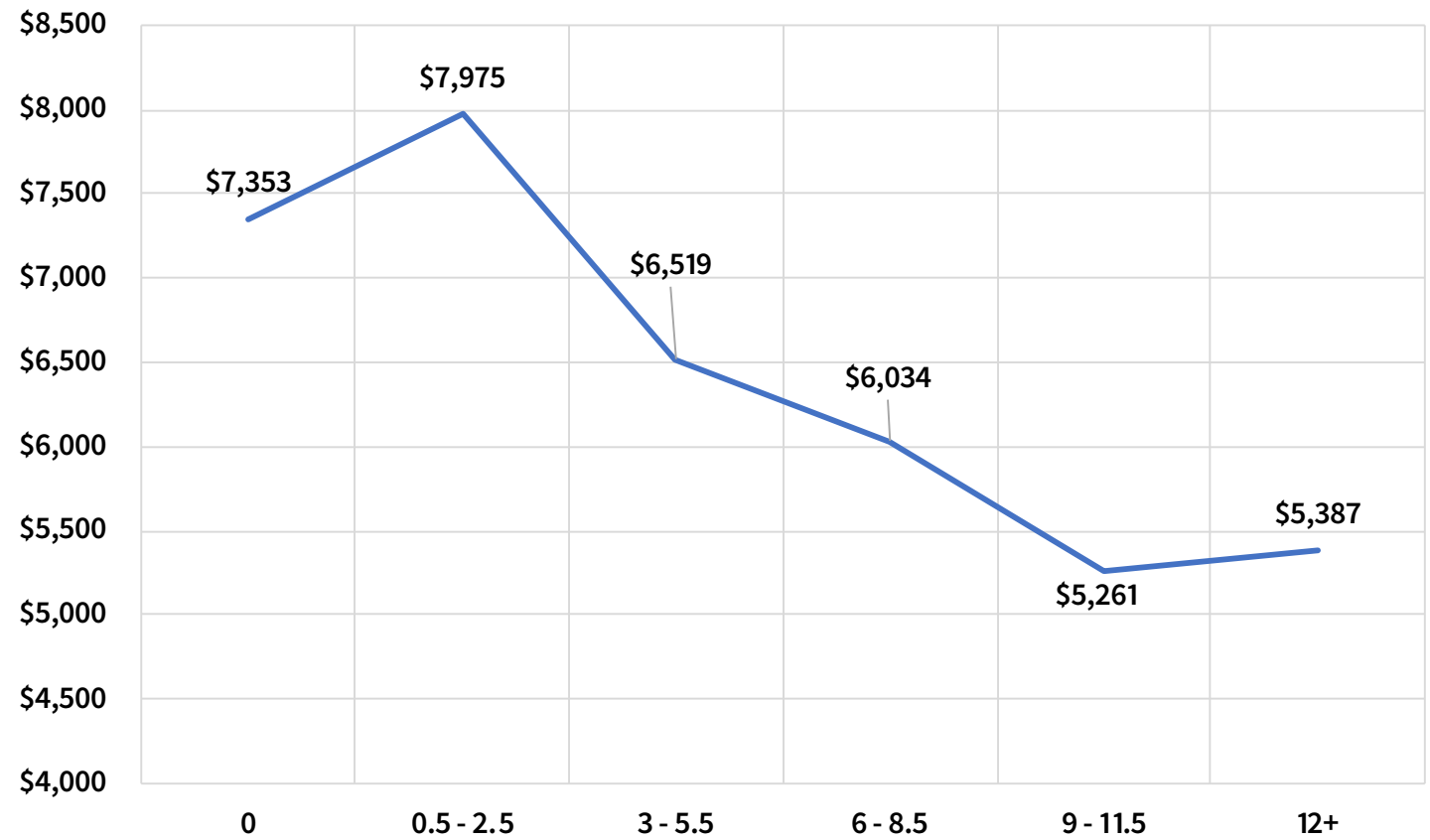
Math and English Completed at Matriculation

Credits	Total Students	Did Not Graduate	%	Did Graduate	%
6 - 8.5	13	3	23%	10	77%
9 - 11.5	21	2	10%	19	90%
12+	23	4	17%	19	83%
<b>Total</b>	<b>58</b>	<b>9</b>	<b>16%</b>	<b>49</b>	<b>84%</b>

## Completion: Average Student Loans

Students matriculating with more than three credits had lower average student loan total amounts at time of degree completion than their peers matriculating with 0-2.5 credits.

Note: Data represent students who completed (n=1743).



# Conclusion

## Acknowledgements

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Mark McGrath

## Contact Information

Questions regarding this report should be directed to:

Scott DesLauriers, Deputy Director  
South Dakota Board of Technical Education  
[scott.deslauriers@state.sd.us](mailto:scott.deslauriers@state.sd.us)