Wyoming State Department of Education

Carl Perkins IV State Report

Secondary Schools and Students
2016-2017

WYOMING
DEPARTMENT OF EDUCATION

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Introduction to Carl Perkins IV

The Carl Perkins Act provides federal support for rigorous career and technical education (CTE) programs that provide students with knowledge and skills to keep the United States competitive. States are provided with funds which are in turn distributed to eligible recipients such as local educational agencies (LEAs) and postsecondary institutions. The funds are used to develop the academic and career technical education knowledge and skills of secondary and postsecondary students who elect to enroll in career and technical education programs.

In keeping with the evolving trends in career and technical education, the Perkins Act was revised in 2006. One of the notable provisions of the Carl D. Perkins Career and Technical Education Improvement Act (Perkins IV) is the call for "programs of study." The law requires states to offer high school students a new kind of career and technical education that helps prepare them for both college and career, not just for success in entry-level occupations. In addition to the programs of study, the Perkins Act of 2006 has several other features that have significantly impacted state and local recipients of Perkins funds. This includes, but is not limited to: a) an increased emphasis on local accountability; b) changes to federal performance measures and definitions of student populations; c) development and recognition of CTE Programs of Study[1]; d) an emphasis on increasing coordination between the different programs within CTE as well as integration with academics; and e) focusing CTE so that students are being prepared for future employment in high-demand, high-skill, and/or high-wage jobs.

The following report presents data collected during the 2016-17 school year from Wyoming high schools. The information contained in this report illustrates how CTE programs are working in the state of Wyoming and also provides invaluable data to inform future planning.

[1] Such Programs of Study should explicitly address: 1) connections between secondary and postsecondary education; and 2) integration of academic and technical skills.

CTE Concentrators and Participants

Demographic information was collected from 64 secondary schools with students participating in CTE programs in Wyoming during the 2016-17 school year. Specifically, this information was collected from CTE Concentrators and CTE Participants. The table below describes how these categories are defined under Perkins IV. The charts and tables in this section summarize the demographic information available for these CTE students.

Table 1. Perkins Student Definitions

Perkins IV Definitions
At the *secondary level*, a **CTE concentrator** is defined as a secondary student who has completed three or more courses in a CTE program, including those who may be currently enrolled in their third course.
At the *secondary level*, a **CTE participant** is defined as a secondary student who has *completed* one or more courses in a CTE program sequence.

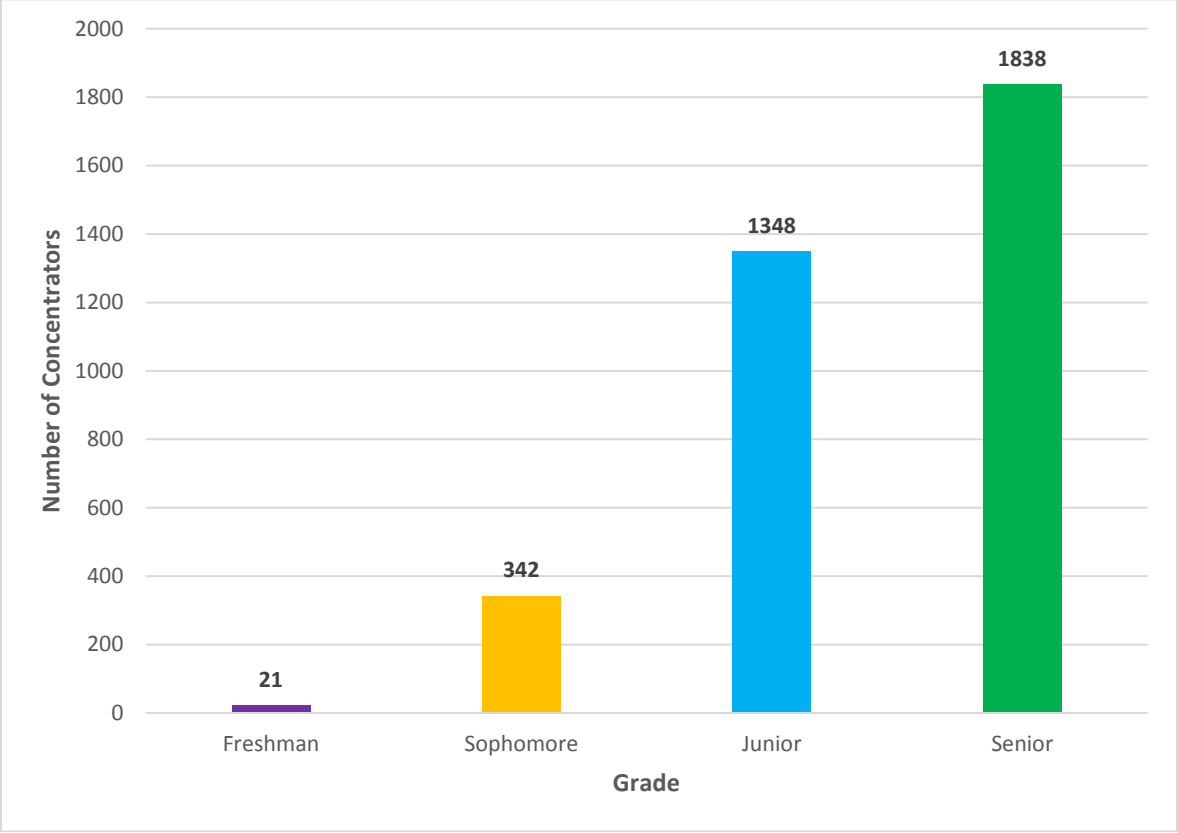
CTE Concentrators

At the secondary level, a **CTE concentrator** is defined as a secondary student who has completed three or more courses in a CTE program, including those who may be currently enrolled in their third course.

There were 3,549 total students reported as active CTE concentrators during the 2016-2017 school year. The charts and tables that follow show the demographic information reported on CTE concentrators by grade level, gender, race/ethnicity, eligibility category and career cluster/program area.

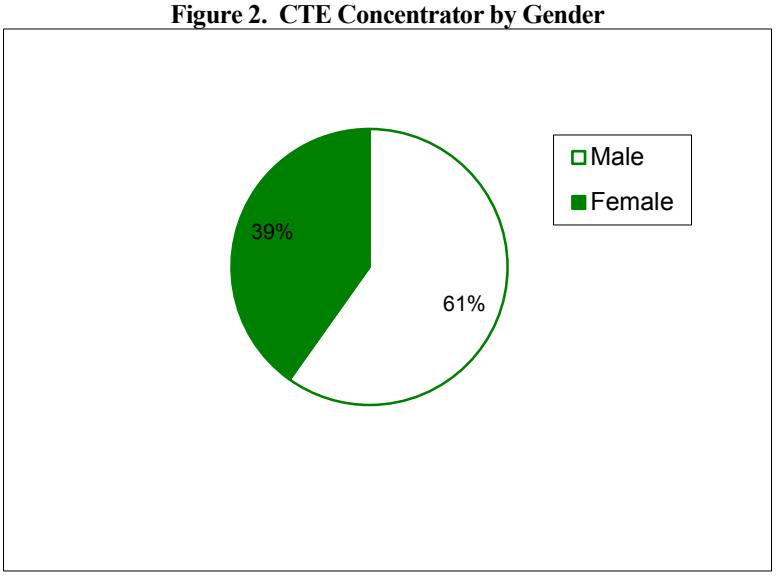
Grade Level. Among CTE concentrators, most students 52% were seniors, followed by 38% who were juniors. Only 10% of CTE concentrators were sophomores, and very few freshman students met the definition of a CTE concentrator. Such a grade level distribution is to be expected given that CTE concentrators must have at least completed 2 courses and currently enrolled in a 3rd course.

Figure 1. CTE Concentrator by Grade



Gender. During the 2016-2017 year, it was reported that 2,168 (61%) CTE concentrators were male and 1,381 (39%) were female. The proportion of males to females was consistent with what was reported during 2015-16 (61% males; 39% females), 2014-15 (60% males; 40% females), 2013-2014 (60% males; 40% females) and 2012-2013 (60% males; 40% females) school years.

Figure 2. CTE Concentrator by Gender



Race/Ethnicity. The majority of CTE concentrators are White (84%), followed by Hispanics (11%). Note that these figures are consistent with the ethnic/racial distribution of the student population statewide. Thus, although there are relatively few minority CTE concentrators, this is consistent with the statewide composition and has remained stable over the years.

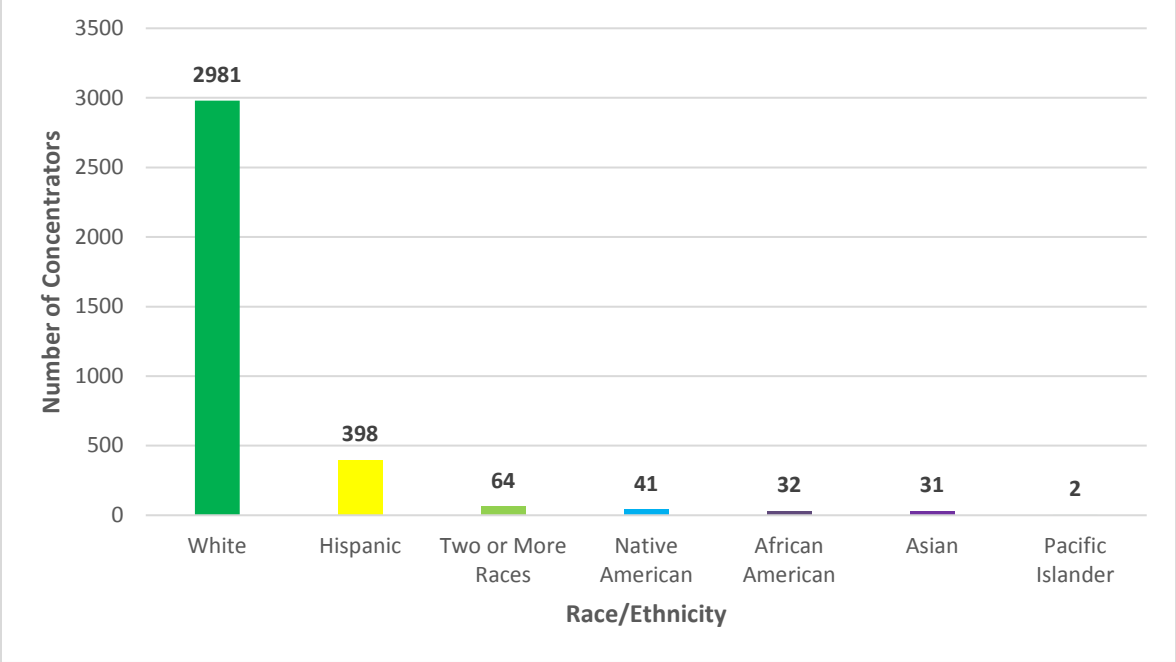


Figure 3. CTE Concentrator by Race/Ethnicity

Eligibility Category. Within the subpopulations, the most concentrators fell into the economically disadvantaged category (18.1% of total concentrators). Compared to last year's eligibility category composition, the distribution of the subpopulations has remained stable. There is a decrease in number of economically disadvantaged students.

Table 2. CTE Concentrator by Eligibility Category

Category*	Count	Percent of Total
Economically Disadvantaged	641	18.1%
Disability	244	6.9%
Single Parent	131	3.7%
Limited English Proficiency	15	0.4%
Other Educational Barriers	172	4.8%
Corrections	12	0.3%
Migrant	5	0.1%
Displaced Homemaker	1	0.0%

*Students may have been eligible under more than one category.

Career/cluster/program area. For the thirteenth year in a row, Agriculture and Architecture and Construction were the program areas with the highest enrollment among CTE concentrators. Manufacturing has regained its place as the third most popular program and Hospitality and Tourism has become the fourth most popular program. Over half (56%) of all CTE concentrators were enrolled in these four program areas.

Table 3. CTE Concentrator by Gender and Program

Program Area	Male Count	Female Count	Percent of Males in Program	Percent of Females in Program	Total Count	Total Percent
Agriculture, Nat. Resources	401	308	18.5%	22.3%	709	20.0%
Architecture & Construction	389	61	17.9%	4.4%	450	12.7%
Manufacturing	416	33	19.2%	2.4%	449	12.7%
Hosp. & Tourism	140	252	6.5%	18.2%	392	11.0%
Health Science	59	239	2.7%	17.3%	298	8.4%
Transportation, Distribution & Logistics	269	19	12.4%	1.4%	288	8.1%
STEM	171	29	7.9%	2.1%	200	5.6%
Info. Technology	97	58	4.5%	4.2%	155	4.4%
Business Admin.	39	64	1.8%	4.6%	103	2.9%
Human Services	6	107	0.3%	7.7%	113	3.2%
Arts, AV Tech & Comm.	68	76	3.1%	5.5%	144	4.1%
Marketing	49	34	2.3%	2.5%	83	2.3%
Finance	47	55	2.2%	4.0%	102	2.9%
Law & Public Safety	16	30	0.7%	2.2%	46	1.3%
Education & Training	1	16	0.0%	1.2%	17	0.5%
Gov. & Public Admin.	0	0	0.0%	0.0%	0	0.0%

Results by CTE pathway show that the Restaurants & Food Services, Construction, Production, Facility & Mobile Equipment Maintenance, and Agribusiness Systems were the most popular pathways among CTE concentrators, with over 43% of concentrators being in these five pathways.

Table 4. CTE Concentrator by Pathway

Pathway	Frequency	Percent
Restaurants & Food/Beverage Services	392	11.0%
Construction	339	9.6%
Production	292	8.2%
Facility & Mobile Equipment Maintenance	266	7.5%
Agribusiness Systems	246	6.9%
Engineering & Technology	200	5.6%
Support Services	176	5.0%
Power, Structural & Technical Systems	152	4.3%
Manufacturing Production Process Dev.	145	4.1%
Animal Systems	137	3.9%
Design/Pre-Construction	111	3.1%
Early Childhood Development & Services	100	2.8%
Diagnostic Services	92	2.6%
Journalism & Broadcasting	87	2.5%
Accounting	86	2.4%
Natural Resources Systems	78	2.2%
Marketing Management	76	2.1%
Food Products & Processing Systems	58	1.6%
Programming & Software Development	52	1.5%
Business Information Management	50	1.4%
Information Support & Services	48	1.4%
Visual Arts	46	1.3%
Emergency & Fire Management Services	46	1.3%
Plant Systems	38	1.1%
Web & Digital Communications	33	0.9%
General Management	28	0.8%
Network Systems	22	0.6%
Therapeutic Services	18	0.5%
Teaching/Training	17	0.5%
Administrative Support	17	0.5%
Business Finance	16	0.5%
Transportation Operations	15	0.4%

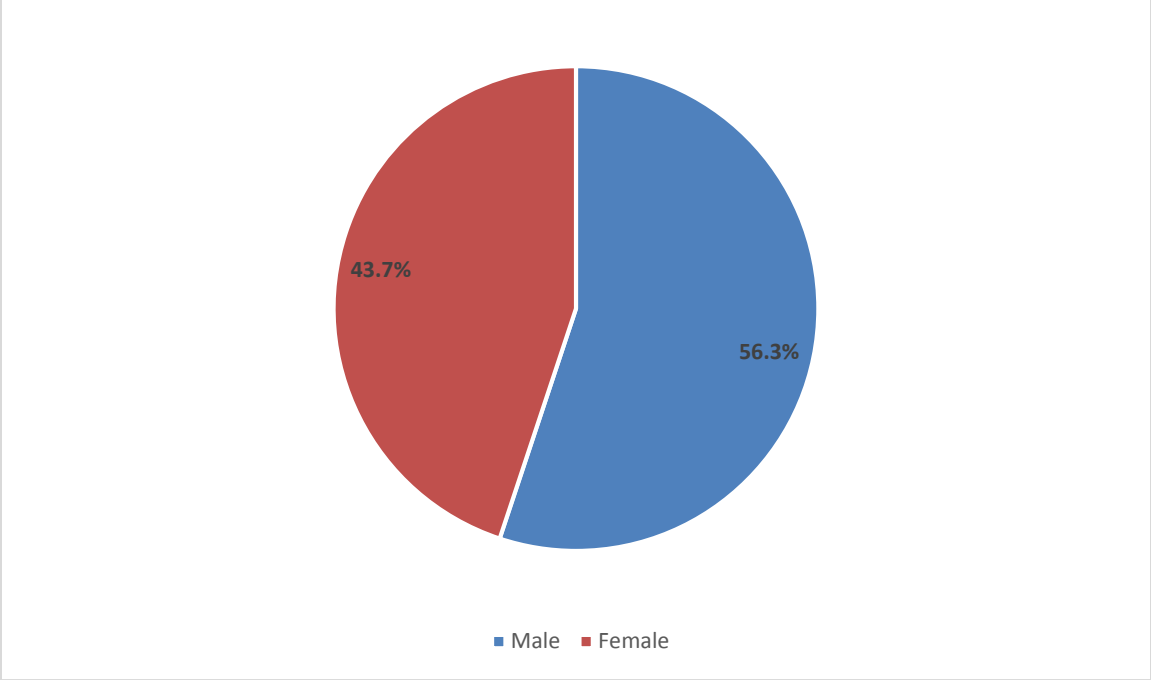
Maintenance, Installation & Repair	12	0.3%
Biotechnology Research & Development	12	0.3%
Family & Community Services	10	0.3%
Printing Technology	8	0.2%
Operations Management	8	0.2%
Sales & Service	7	0.2%
Merchandising	5	0.1%
Telecommunications	3	0.1%
Consumer Services	3	0.1%
Marketing Communications	2	0.1%

CTE Participants

At the secondary level, a **CTE participant** is defined as a secondary student who has *completed* one or more courses in a CTE program sequence.

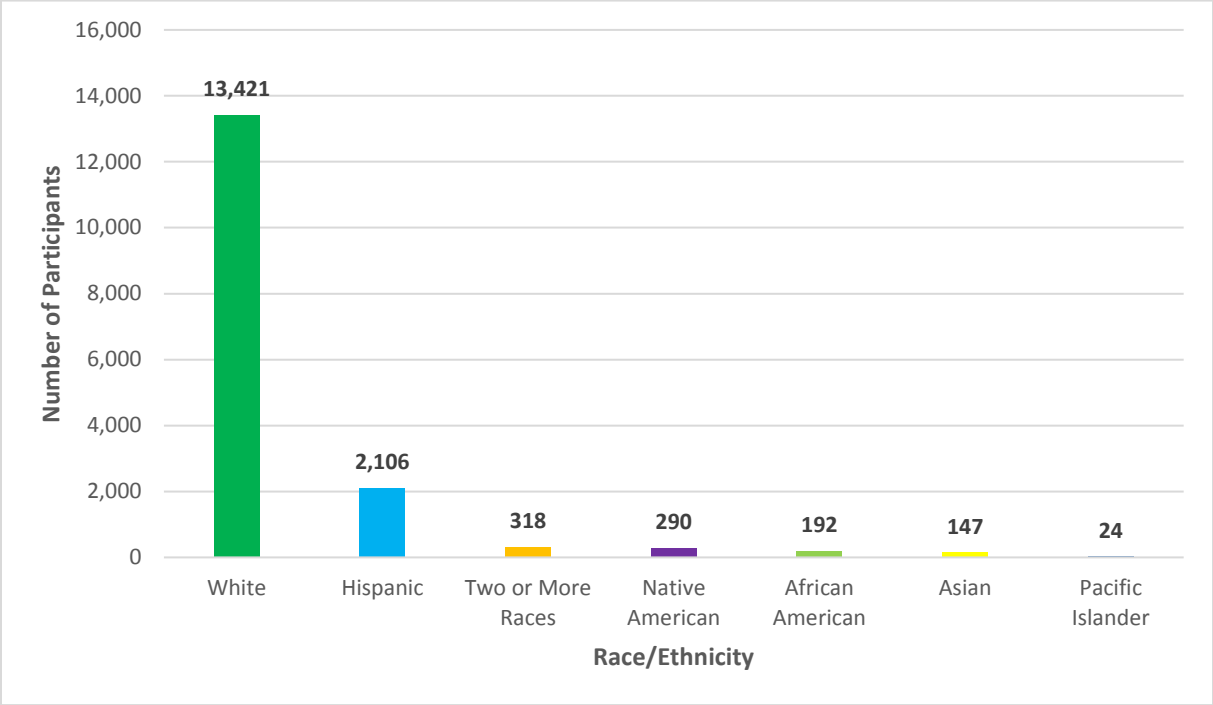
Gender. During the 2016-2017 school year, it was reported that 9,289 (56.3%) males and 7,209 (43.7%) females were CTE participants, for a total of 16,498 participants.

Figure 4. CTE Participants by Gender



Race/Ethnicity. As noted previously, due to limited ethnic diversity overall in Wyoming, the ethnic distribution of CTE participants consists of 81.3% White students.

Figure 5. CTE Participants by Race/Ethnicity



Eligibility Category. Most CTE participants in a special population were categorized as economically disadvantaged (23.5% of all participants).

Table 5. CTE Participants by Eligibility Category

Category*	Count	Percent of Total
Economically Disadvantaged	3,869	23.5%
Disability	1,615	9.8%
Other Educational Barrier	1,084	6.6%
Single Parent	448	2.7%
Limited English Proficiency	215	1.3%
Corrections	86	0.5%
Migrant Status	14	0.0%
Displaced Homemakers	12	0.0%

*Students may have been eligible under more than one category.

Federal Indicators

Summary of Results

The following table shows an overall summary of results statewide by each of the federal Perkins IV indicators. The sections that follow describe results for each of these indicators in more detail and by subgroup. Columns highlighted in yellow indicate that target goals were met at 90% or greater for the 2016-2017 school year.

Table 6. Summary of Federal Perkins IV Indicator Results: Statewide

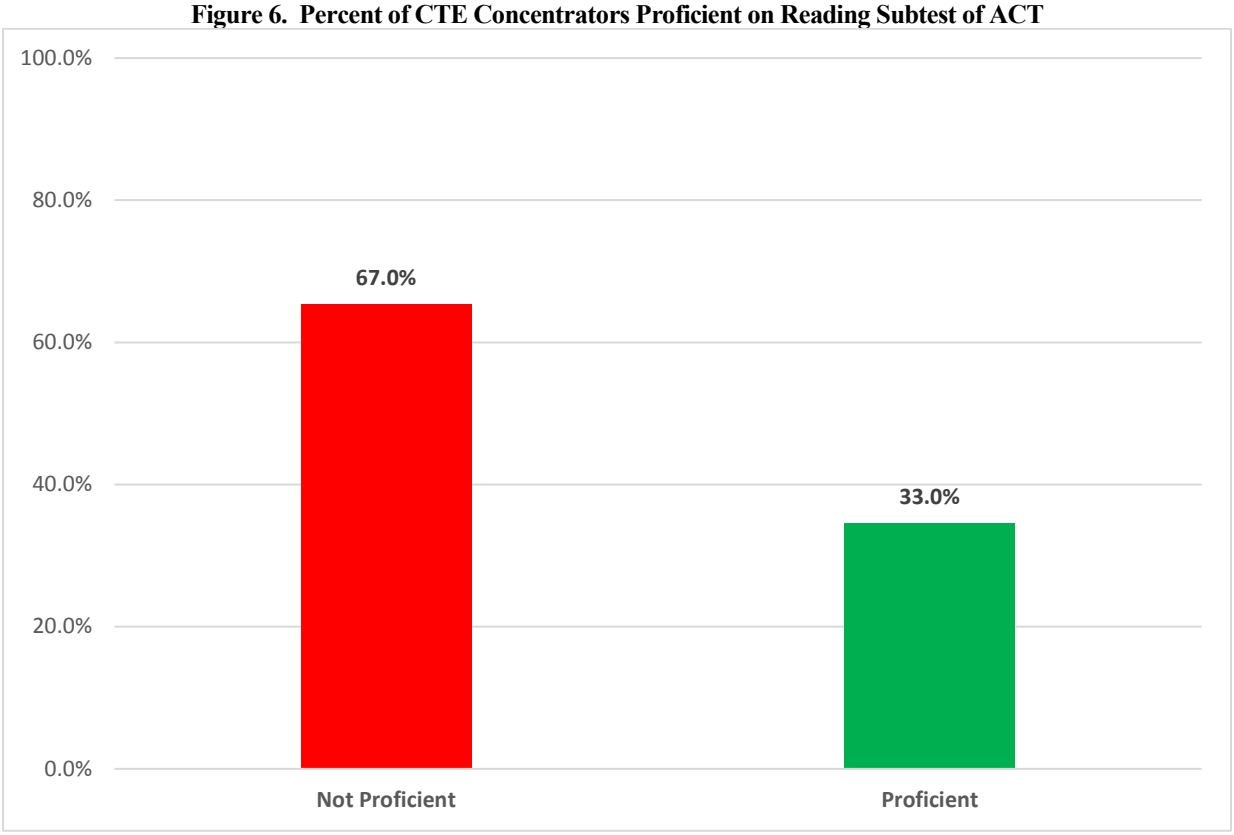
Indicators	Perkins IV Measurement Definitions	2016-2017 Results	2016-2017 Targets
(1S1) Academic Attainment: Reading	Percent of CTE concentrators who have met the proficient or advanced level on the ACT reading assessment administered by the State of Wyoming under Section 1111(b)(3) of the Elementary and Secondary Education Act (ESEA) as amended by the No Child Left Behind Act based on the scores that would be included in the State's computation of adequate yearly progress (AYP)	32.95	30.00
(1S2) Academic Attainment: Math	Percent of CTE concentrators who have met the proficient or advanced level on the ACT math assessment administered by the State of Wyoming under Section 1111(b)(3) of the Elementary and Secondary Education Act (ESEA) as amended by the No Child Left Behind Act based on the scores that would be included in the State's computation of adequate yearly progress (AYP)	38.30	38.00
(2S1) Technical Skill Attainment	Percent of CTE concentrators who passed technical skill assessments that are aligned with industry-recognized standards, if available and appropriate, during the reporting year.	75.08	71.86
(3S1) Completion	Percent of CTE concentrators who earned a regular secondary school diploma, earned a General Education Development (GED) credential as a State-recognized equivalent to a regular high school diploma (if offered by the State) *or* other State-recognized equivalent (including recognized alternative standards for individuals with disabilities), *or* earned a proficiency credential, certificate, or degree, in conjunction with a secondary school diploma (if offered by the State) during the reporting year.	99.45	95.00
(4S1) Graduation Rate	Percent of CTE concentrators who, in the reporting year, were included as graduated in the State's computation of its graduation rate as described in Section 1111(b)(2)(C)(vi) of the ESEA	95.36	94.00
(5S1) Placement	Percent of CTE concentrators who left secondary education and were placed in postsecondary education or advanced training, in the military service, or employment in the second quarter following the program year in which they left secondary education.	94.01	95.00
(6S1) Non-Traditional Participation	Percent of CTE participants from underrepresented gender groups who participated in a program that leads to employment in nontraditional fields during the reporting year.	29.88	33.32
(6S2) Non-Traditional Completion	Percent of CTE concentrators from underrepresented gender groups who completed a program that leads to employment in nontraditional fields during the reporting year.	22.34	29.86

1S1 – Academic Attainment: Reading

To compute academic attainment, CTE concentrators are matched with all 11th graders who took the ACT in spring 2017. The indicator was then calculated by the percent of CTE concentrators proficient on the reading portion of the ACT.

Overall, **33.0% of CTE concentrators were proficient on the ACT reading** subtest as compared to 67.0% not proficient. This represents a decrease from the prior year when 34.7% of concentrators were proficient.

Figure 6. Percent of CTE Concentrators Proficient on Reading Subtest of ACT



Indicator 1S1 by Subpopulations:

Results for indicator 1S1 by the subgroups of gender, race/ethnicity and special populations are reported in the following table. Highlights and key finding include:

- Proficiency rates by gender show that the percent proficient was greater for females (35.5%) than males (31.2%).
- Students in the White race/ethnicity category had the highest percentage of students meeting reading proficiency targets for reading at 35.6%.
- The highest proportion of special population students to meet this indicator were non-traditional (35.3%).

Table 7. Indicator 1S1 Results by Subpopulations

(1S1) Academic Attainment: Reading			
Gender	**# of Students in Numerator**	**# of Students in Denominator**	**Percent of Students Meeting Indicator**
Male	246	788	**31.2%**
Female	189	532	**35.5%**
Race/Ethnicity			
American Indian	4	17	**23.5%**
Asian	*	*	**NA**
Pacific Islander	*	*	**NA**
Black	*	19	**21.1%**
Hispanic	32	165	**19.4%**
White	386	1,085	**35.6%**
Two or more races	7	25	**28.0%**
Special Populations			
Individuals With Disabilities	11	100	**11.0%**
Economically Disadvantaged	63	236	**26.7%**
Single Parents	11	35	**31.4%**
Displaced Homemakers	*	*	**NA**
Limited English Proficient	*	*	**NA**
Migrant	*	*	**NA**
Non-Traditional	124	351	**35.3%**

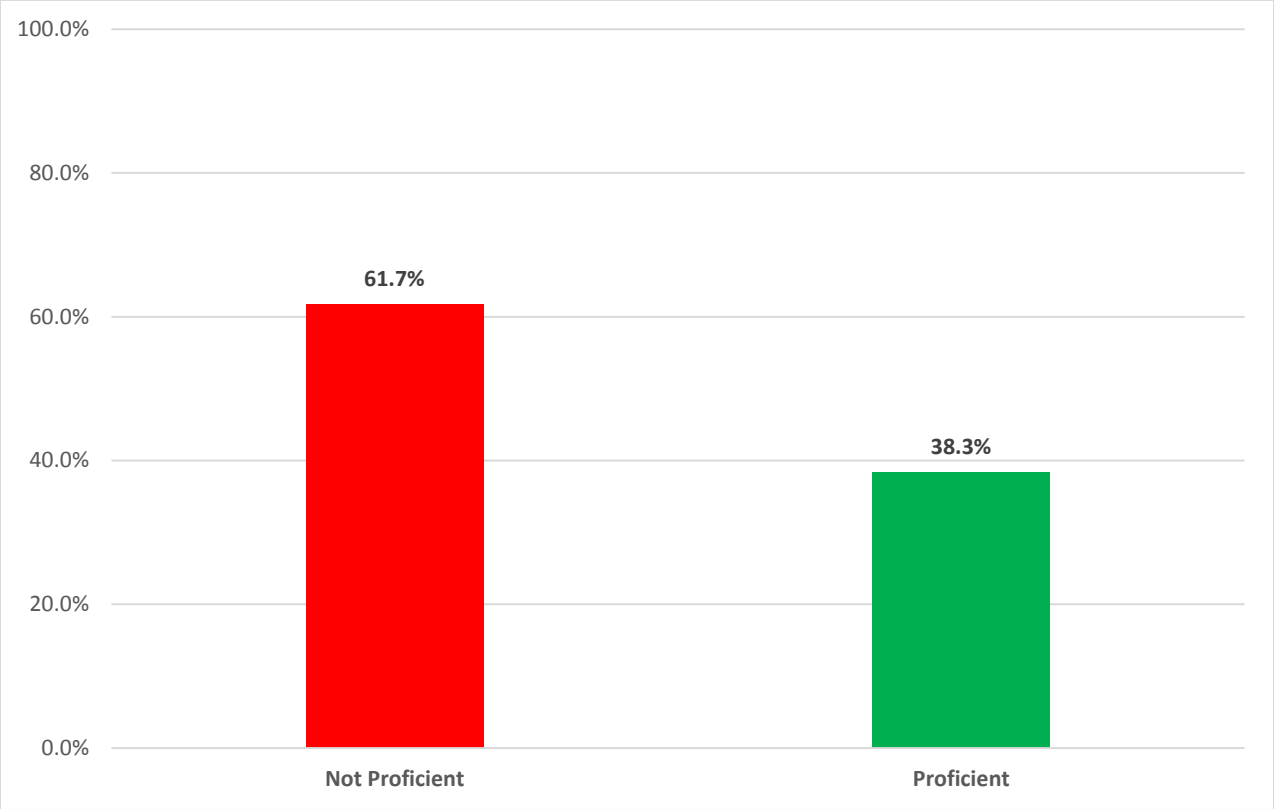
* Low counts (denominator <10) and values >=95% or <=5% have been suppressed.

1S2 – Academic Attainment: Mathematics

To compute academic attainment, CTE concentrators are matched with all 11th graders who took the ACT in spring 2017. The indicator was then calculated by the percent of CTE concentrators proficient on the math portion of the ACT.

Statewide results show that **38.3% of CTE concentrators were proficient in math** as compared to 61.7% who were not proficient. This represents a decrease in proficiency as compared to last year (41.9%).

Figure 7. Percent of CTE Concentrators Proficient on Math Subtest of ACT



Indicator 1S2 by Subpopulations:

Results for indicator 1S2 by subgroups are shown in the table below. Highlights of these results include:

- Proficiency rates by gender show that the percent proficient was greater for males (41.2%) than females (34.0%).
- For race/ethnicity, White students (40.9%) were most likely to meet the math proficiency targets.
- For special populations, students in the nontraditional (30.8%) category had the highest proportion of students meeting the proficiency target.

Table 8. Indicator 1S2 Results by Subpopulations

(1S2) Academic Attainment: Mathematics			
Gender	**# of Students in Numerator**	**# of Students in Denominator**	**Percent of Students Meeting Indicator**
Male	325	789	**41.2%**
Female	181	532	**34.0%**
Race/Ethnicity			
American Indian	2	17	**11.8%**
Asian	*	*	**NA**
Pacific Islander	*	*	**NA**
Black	5	19	**26.3%**
Hispanic	44	165	**26.7%**
White	444	1,086	**40.9%**
Two or more races	9	25	**36.0%**
Special Populations			
Individuals With Disabilities	*	(100-109)	**<10.0%**
Economically Disadvantaged	62	236	**26.3%**
Single Parents	10	35	**28.6%**
Displaced Homemakers	*	*	**NA**
Limited English Proficient	*	*	**NA**
Migrant	*	*	**NA**
Non-Traditional	108	351	**30.8%**

* Low counts (denominator <10) and values >=95% or <=5% have been suppressed.

2S1 – Technical Skill Attainment

Indicator 2S1 reports on the percent of CTE concentrators who passed technical skill assessments that are aligned with industry-recognized standards, if available and appropriate, during the reporting year. In the past, the Wyoming Department of Education initiated and carried out efforts to develop and implement local assessments in partnership with subject matter experts from around the state. These assessments were the primary mechanisms utilized for technical skills attainment reporting at the local level, and include the following titles:

- Agriculture Mechanics
- General Agriculture (includes Agriculture Business, Animal Science, Plant Science)
- Cabinetmaking & Woodworking
- Residential & Commercial Carpentry
- Technical Drafting
- Architectural Drafting
- Welding
- Business:
    - Accounting
    - Finance
    - Business Technology & Operations
    - Marketing, Management & Entrepreneurship
- Tourism, Hospitality, Foods & Nutrition:
    - Foods, Nutrition & Wellness
    - Professional Foods
    - Tourism, Hospitality & Lodging Management
- Child Development
- Interior Design
- Textiles

These locally developed assessments, referred to as "Wyoming Pathway Assessments," will be available to local districts to be administered at their discretion, and will be reviewed and revised on a three-year cycle if local stakeholders continue to find value in their availability and use. Starting in the 2015-16 program year, however, the State shifted funding priority to technical skill assessments that align with national industry standards and competencies and lead to credentials, certificates, post-secondary credits or certifications. These include NOCTI Pathway and Job-Ready Assessments (options found at www.nocti.org) and the Automotive Service Excellence (ASE) assessments. The primary reasons for this shift in focus are: 1) to underscore the importance of student outcomes and program improvement reflective of national industry-specific skills and competencies; and 2) to encourage student engagement in the assessment process by providing them with increased opportunities to earn and stack credentials.

Section 113(b)(A)(ii)) of Perkins says that states must develop an indicator relating to "student attainment of career and technical skill proficiencies, including student achievement on technical assessments that **are aligned with industry-recognized standards**, if available and appropriate." By partnering with NOCTI and ASE to provide access to a wide range of assessments that align with national industry-recognized standards, Wyoming has increased its capacity to meet this requirement. In addition, local schools and programs have more choices, more comprehensive score report

feedback, and meaningful outcomes of the technical skills assessment process for students. Wyoming will continue to develop this assessment system to include the following:

- Digital badging;
- Articulations with post-secondary institutions in Wyoming for transcribing assessment proficiencies to college credit;
- Performance-based assessment options;
- Increased opportunities for certifications and credentials in all content areas.

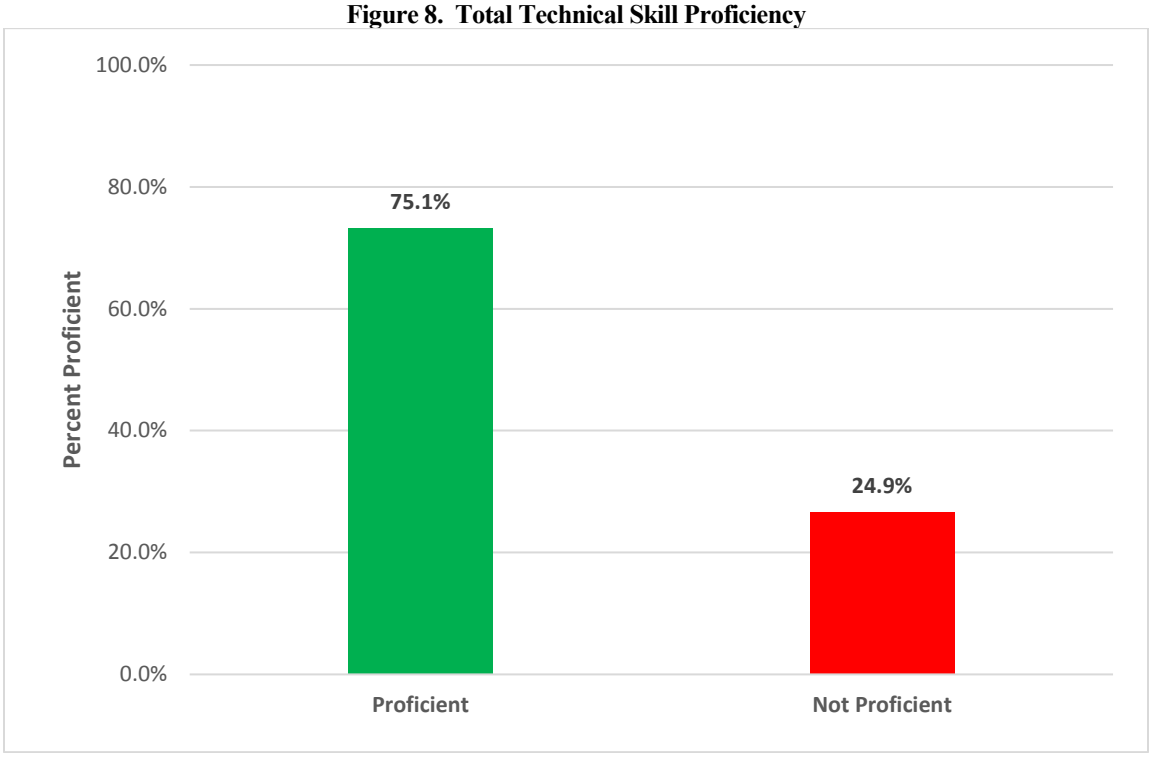
In addition to the Wyoming Pathway Assessments, NOCTI Pathway & Job-Ready Assessments, and ASE assessments, data was obtained on students within a pathway that has an industry-certified exam available (e.g., Culinary ProStart, CNA certification, etc.). Districts are required to seek approval of industry-certified exams that are not already on the "approved list" from the Wyoming Department of Education CTE team. For Pre-Engineering concentrators, data on their performance in "Project Lead the Way", a course sequence specific for Pre-Engineering students was also obtained.

The Wyoming Department of Education developed a state-specific assessment-to-pathway crosswalk that aligns appropriate technical skills assessment to all pathways and career clusters. Assessment results are collected via a data import web service between the Wyoming Department of Education and NOCTI. ASE assessment results are reported to the WDE by ASE. Industry-certified exams are self-reported by school districts, and only reflect pass/fail values. The assessment results are then matched with the CTE concentrator data reported by the districts and analyzed for pathway alignment.

Determination of technical skill attainment for the 2016-17 program year was made based on which CTE program area concentrators participated in and was calculated accordingly. Concentrators had the opportunity to take an assessment linked to their CTE program. Students in an engineering pathway had the opportunity to participate in Project Lead the Way.

Results showed that 75.1% of CTE concentrators were proficient in technical skills compared to 24.9% who were not proficient. This is an increase in proficiency rate from the 2015-2016 school year where 73.3% of CTE concentrators were proficient in technical skill attainment.

Figure 8. Total Technical Skill Proficiency



The table below shows results for proficiency in the various assessment categories. CTE concentrators did well on the 21st Century Skills Assessment, and industry certified exams. In contrast, students had more difficulty on the ASE automotive assessments.

Table 9. Overall Proficiency by Type of Assessment

	# Who Passed	# Who Took	Percent Proficient
Wyoming Pathway Assessments	832	1,154	72.1%
NOCTI Assessments	299	426	70.2%
Industry-certified exam	327	338	96.7%
ASE Auto Assessment	62	109	56.9%
21st Century Skills Assessment	44	57	77.2%
Project Lead the Way Courses (Pre-Engineering)	36	45	80.0%
TOTAL	**1,600**	**2,129**	**75.2%**

The following table shows the number and percent of concentrators who were proficient in each CTE cluster. As shown, students in Health Science, Human Services, and Law & Public Safety were the most proficient. Students in Arts, Transportation, and Manufacturing were the least proficient.

Table 10. Technical Proficiency by Program Area

Program Area	Passed Assessment	Took Assessment	Percent Proficient
Agriculture, Nat. Resources	382	439	87.0%
Manufacturing	151	274	55.1%
Architecture & Construction	212	278	76.3%
Hosp. & Tourism	193	275	70.2%
Health Science	145	155	93.5%
STEM	126	162	77.8%
Transportation, Distribution & Logistics	70	122	57.4%
Info. Technology	57	69	82.6%
Human Services	53	59	89.8%
Arts, AV Tech & Comm.	28	68	41.2%
Finance	48	67	71.6%
Business Admin.	42	52	80.8%
Marketing	42	53	79.2%
Education & Training	8	13	61.5%
Law & Public Safety	43	43	100.0%
Gov. & Public Admin.	0	0	NA
TOTAL	**1,600**	**2,129**	**75.2%**

Indicator 2S1 by Subpopulations:

Highlights of results for technical skill attainment by subpopulation include:

- Results by gender show that a higher percentage of females (79.6%) met the technical skill proficiency skill targets than males (72.3%).
- The racial category with the highest percentage of students meeting technical skill proficiency targets was Asian (82.4%) students.
- Non-Traditional CTE concentrators (79.0%) and Single Parents (71.0%) showed the highest proficiency levels from special populations.

Table 11. Indicator 2S1 Results by Subpopulations

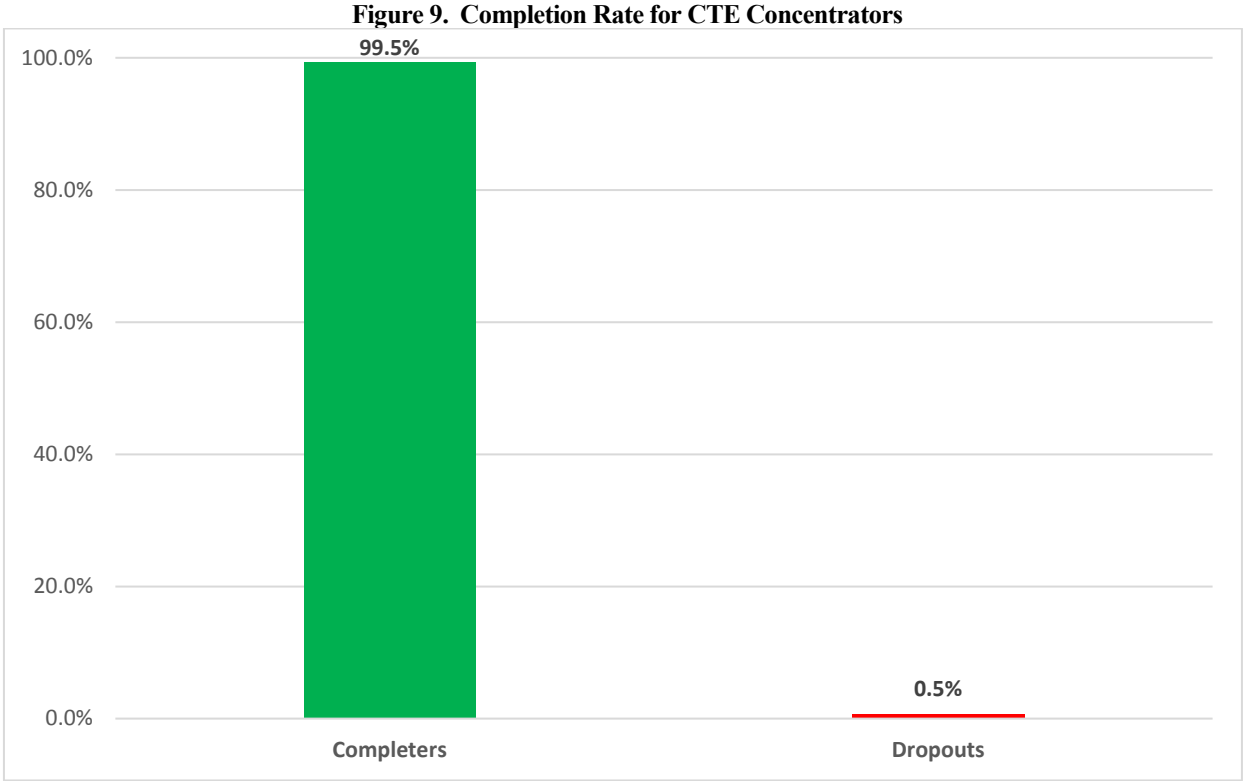
(2S1) Technical Skill Attainment			
Gender	**# of Students in Numerator**	**# of Students in Denominator**	**Percent of Students Meeting Indicator**
Male	952	1,316	**72.3%**
Female	639	803	**79.6%**
Race/Ethnicity			
American Indian	10	23	**43.5%**
Asian	14	17	**82.4%**
Pacific Islander	*	*	**NA**
Black	11	26	**42.3%**
Hispanic	156	228	**68.4%**
White	1,370	1,787	**76.7%**
Two or more races	29	37	**78.4%**
Special Populations			
Individuals With Disabilities	73	139	**52.5%**
Economically Disadvantaged	245	364	**67.3%**
Single Parents	49	69	**71.0%**
Displaced Homemakers	*	*	**NA**
Limited English Proficient	*	*	**NA**
Migrant	*	*	**NA**
Non-Traditional	377	477	**79.0%**

3S1 – Secondary School Completion

The indicator is calculated by identifying CTE concentrators who were noted as earning a diploma or dropping out of secondary education during the reporting year (2016-17). Students noted as receiving a diploma are included in the numerator while all students noted as leaving secondary education are included in the denominator.

Results show that 1,826 CTE concentrators left secondary education during the 2016-2017 school year. This included 1,816 completers and 10 dropouts. Thus, 99.5% of CTE concentrators who left secondary education were reported as graduating during the 2016-2017 school year. This represents an increase of 0.1% as compared to the prior year (99.4%).

Figure 9. Completion Rate for CTE Concentrators



Indicator 3S1 by Subpopulations:

Results by subpopulations for indicator 3S1 show a similar percentage of students meeting the indicator. Highlights of the results shown in the table below include:

- A comparable percentage of females met indicator 3S1 compared to males.
- For race/ethnicity subgroups, all subgroups attained at or above 95.0% completion.
- For special populations, all subgroups attained at or above 95.0% completion.

Table 12. Indicator 3S1 Results by Subpopulations

(3S1) Secondary School Completion			
Gender	**# of Students in Numerator**	**# of Students in Denominator**	**Percent of Students Meeting Indicator**
Male	*	(1,100-1,109)	**>=95.0%**
Female	*	(710-719)	**>=95.0%**
Race/Ethnicity			
American Indian	*	(10-19)	**>=95.0%**
Asian	*	(20-29)	**>=95.0%**
Pacific Islander	*	*	**NA**
Black	*	(10-19)	**>=95.0%**
Hispanic	*	(180-189)	**>=95.0%**
White	*	(1,560-1,569)	**>=95.0%**
Two or more races	*	(30-39)	**>=95.0%**
Special Populations			
Individuals With Disabilities	*	(100-109)	**>=95.0%**
Economically Disadvantaged	*	(290-299)	**>=95.0%**
Single Parents	*	(70-79)	**>=95.0%**
Displaced Homemakers	*	*	**NA**
Limited English Proficient	*	*	**NA**
Migrant	*	*	**NA**
Non-Traditional	*	(320-329)	**>=95.0%**

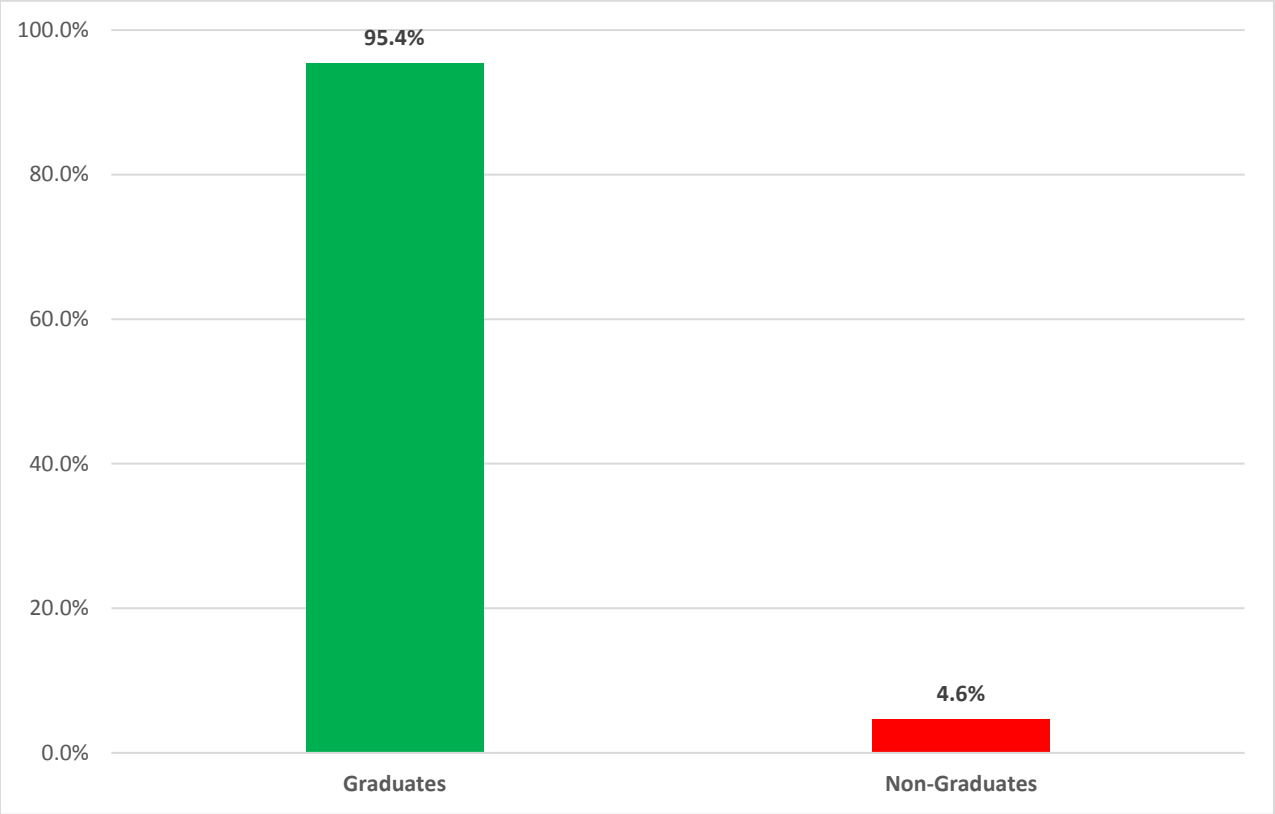
* Low counts (denominator <10) and values >=95% or <=5% have been suppressed.

4S1 – Student Graduation Rates

To calculate indicator 4S1, graduation data was matched with identified CTE concentrators, who in the reporting year, were included as graduated in the State's computation of its graduation rate. This indicator varies from 3S1 in that the cohort of CTE concentrators used in the calculation of this indicator consists of last year's (2015-16) graduates. This is consistent with how the WDE calculated and reported official graduation rates.

Results show that 95.4% (1,934 out of 2,028) of eligible CTE concentrators were reported as graduating as compared to 4.6% who did not graduate. This represents an increase from last year (92.9%).

Figure 10. Graduation Rate Among CTE Concentrators



Indicator 4S1 by Subpopulations:

Results for indicator 4S1 by subgroups of gender, race/ethnicity and special populations are shown in the table below. Highlights of these results include:

- Overall, females showed higher graduation rates (>95.0%) than males (94.5%).
- Pacific Islander and White students were the racial groups with the highest graduation rates.
- Examination of special populations showed that LEP students had the highest proportion of concentrators who graduated (>=95.0%).

Table 13. Indicator 4S1 Results by Subpopulations

(4S1) Student Graduation Rates			
Gender	**# of Students in Numerator**	**# of Students in Denominator**	**Percent of Students Meeting Indicator**
Male	1,136	1,202	94.5%
Female	*	(820-829)	**>=95.0%**
Race/Ethnicity			
American Indian	13	15	**86.7%**
Asian	*	(10-19)	**>=90.0%%**
Pacific Islander	*	*	**NA**
Black	*	(10-19)	**>=90.0%**
Hispanic	216	229	**94.3%**
White	*	(1,720-1,729)	**>=95.0%**
Two or more races	28	30	**93.3%**
Special Populations			
Individuals With Disabilities	208	228	**91.2%**
Economically Disadvantaged	661	717	**91.2%**
Single Parents	0	0	**NA**
Displaced Homemakers	0	0	**NA**
Limited English Proficient	*	(30-39)	**>=95.0%**
Migrant	*	*	**NA**
Non-Traditional	355	367	**96.7%**

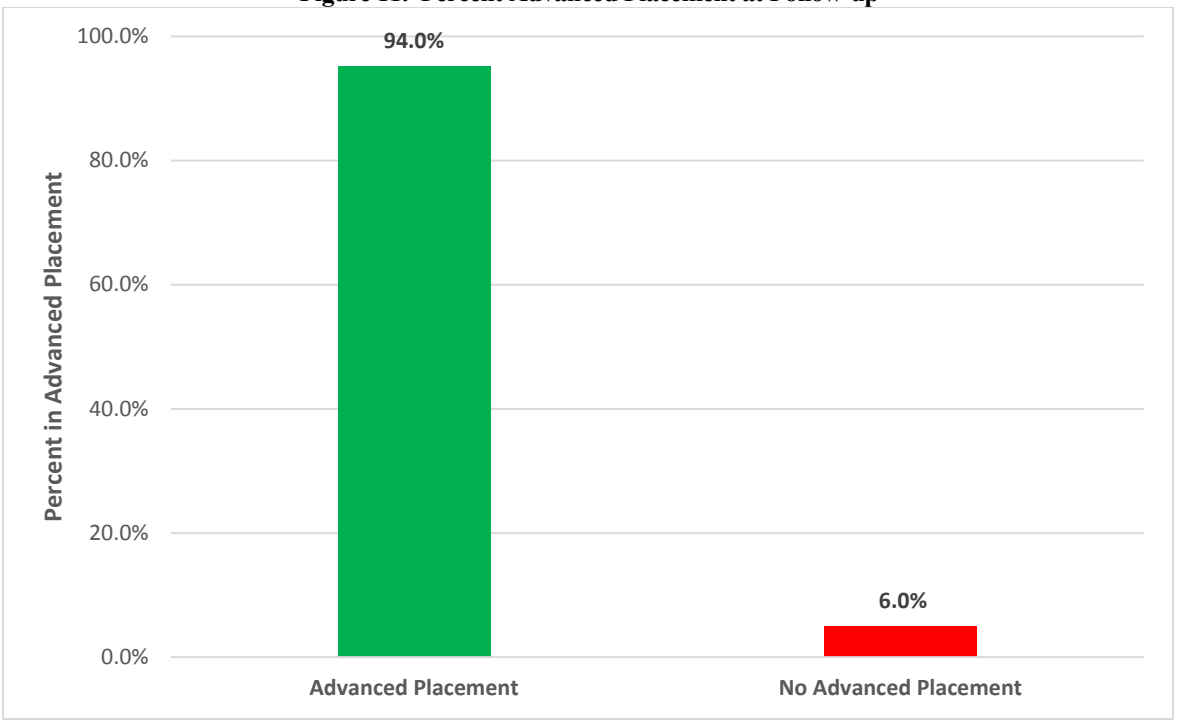
* Low counts (denominator <10) and values >=95% or <=5% have been suppressed.

5S1 – Secondary Placement in employment, post-secondary/advanced education, or the military at follow-up

Under Perkins IV guidelines, follow-up data was required to be collected during the second quarter of the year (e.g., between October 1, 2016 to December 31, 2016 for students leaving secondary education in the 2015-16 school year). Data was collected on all students who left secondary education, not only graduates. CTE concentrators who left secondary education during the prior year and were followed up with are included in the calculation of this indicator (students for which follow-up was not completed are excluded).

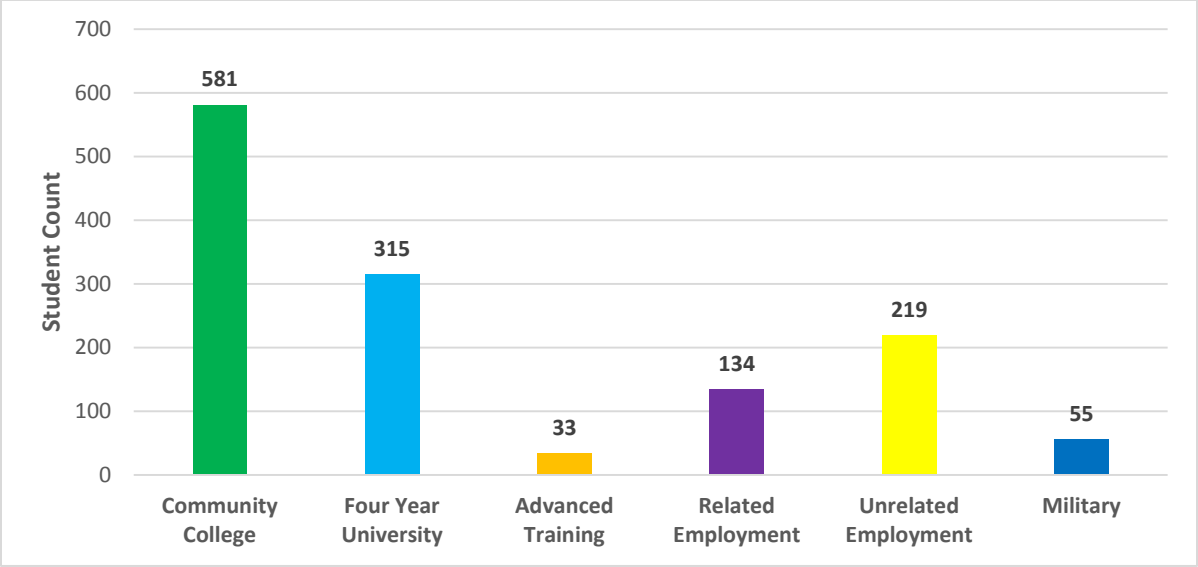
The following graph shows the percent of students in Advanced Placement (i.e. employment, post-secondary education, advanced training, or military) after leaving secondary education. Data was collected the second quarter of 2016 on 1,369 students who had left secondary education in 2015-2016. As shown, 94.0% of students were in advanced placement during the second quarter. This is lower than the prior year's placement result of 95.7%.

Figure 11. Percent Advanced Placement at Follow-up



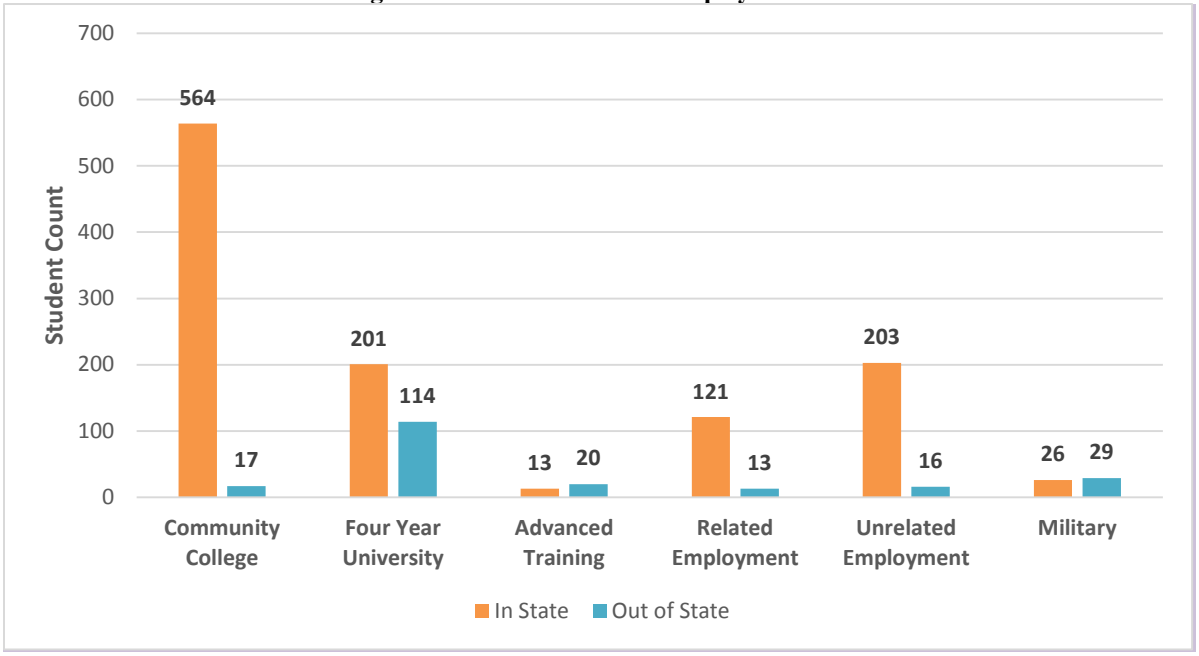
The largest group of students were enrolled in community college (42.4%) or in a four year university (23.0%) after leaving secondary education. Additionally, 16.0% were in employment unrelated to their CTE program. The fewest students were placed in employment related to their CTE (9.8%), the military (4.0%), or advanced training (2.4%). Additionally 6.0% of students had no advanced placement. Note that students can be reported in more than one category.

Figure 12. Type of Placement at Follow-up



Generally, students were located in Wyoming at follow-up. Follow-up students most likely to be located out of state were in advanced training, a four year university or in the military.

Figure 13. Placement at Follow-up by Location



There were 82 (6.0%) follow-up students that were not in advanced placement. This includes students who are serving religious missions, stay-at-home parents, and the unemployed.

Indicator 5S1 by Subpopulations:

Results by the subpopulations of gender, race/ethnicity and special populations are shown in the table below. Highlights of these results include:

- Females (94.8%) showed higher rates of advanced placement than males (93.5%).
- All racial subgroups did well on this indicator. The group with the lowest percentage of students placed was 'two or more races' (81.8%).
- Among special populations, non-traditional students had the highest placement rate at >=95.0%.

Table 14. Indicator 5S1 Results by Subpopulations

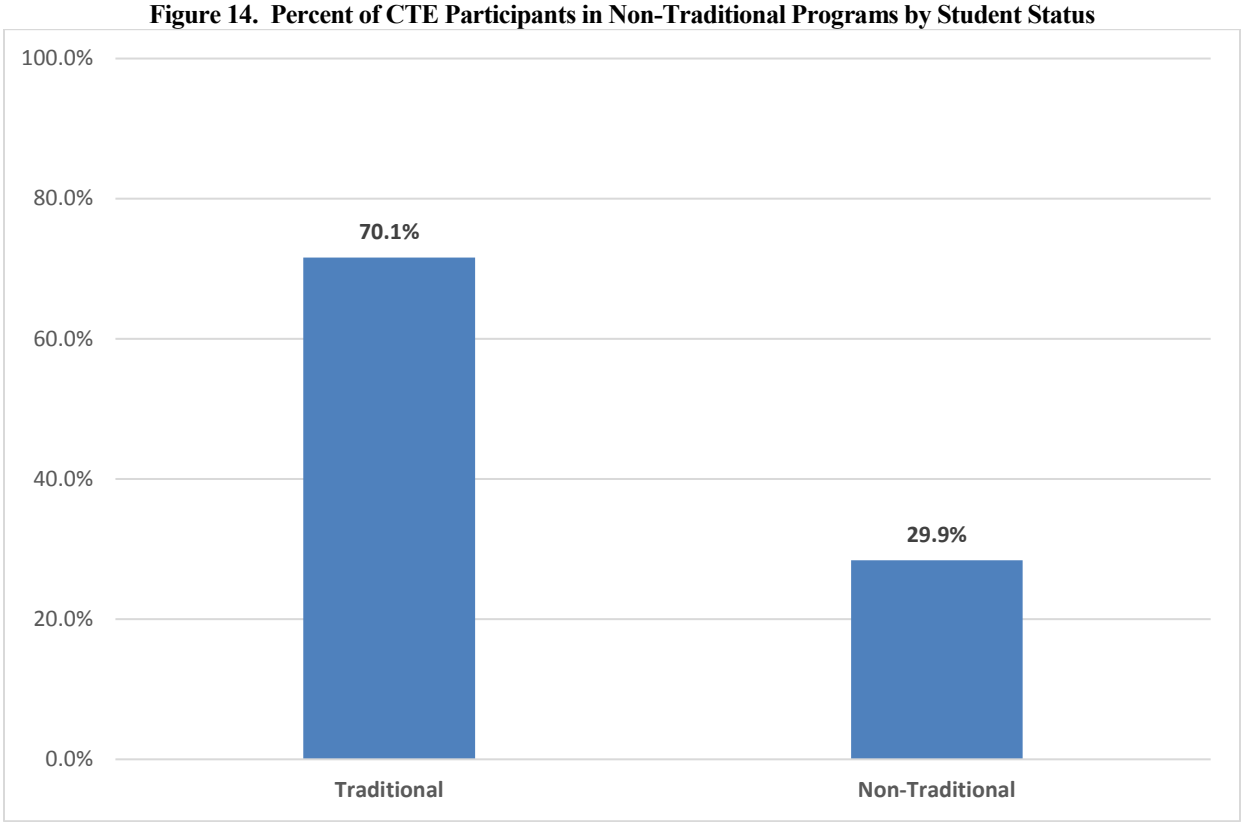
(5S1) Placement			
Gender	**# of Students in Numerator**	**# of Students in Denominator**	**Percent of Students Meeting Indicator**
Male	778	832	**93.5%**
Female	509	537	**94.8%**
Race/Ethnicity			
American Indian	*	*	**NA**
Asian	*	*	**NA**
Pacific Islander	*	*	**NA**
Black	*	*	**NA**
Hispanic	*	(140-149)	**>=95.0%**
White	1,108	1,182	**93.7%**
Two or more races	18	22	**81.8%**
Special Populations			
Individuals With Disabilities	102	114	**89.5%**
Economically Disadvantaged	248	266	**93.2%**
Single Parents	49	52	**94.2%**
Displaced Homemakers	*	*	**NA**
Limited English Proficient	*	*	**NA**
Migrant	*	*	**NA**
Non-Traditional	*	(270-279)	**>=95.0%**

6S1 – Non-Traditional Participation

To calculate non-traditional CTE participation rates, student level participant data was analyzed. The total number of participants who were in a non-traditional occupational field (as determined by CIP code provided) were counted. Note that the latest non-traditional guidelines were used to determine fields that are considered non-traditional for each gender. For example, nursing is a non-traditional male profession while engineering is a non-traditional female profession. Participants whose gender matches those in a non-traditional program (e.g. females pursuing an engineering field) are considered non-traditional participants whereas participants whose gender does not match a non-traditional program (e.g. a male pursuing an engineering field) are considered traditional participants.

For the 2016-2017 reporting year, approximately 29.9% of students in non-traditional programs were in under-represented gender groups. This figure is higher than last year's result of 28.5%.

Figure 14. Percent of CTE Participants in Non-Traditional Programs by Student Status



Indicator 6S1 by Subpopulations:

Results for indicator 6S1 are reported by subgroup in the table below. Data by gender, race/ethnicity and special populations is included. Key findings from these results include:

- A significant difference in results by gender was observed. While 71.5% of female students participated in a non-traditional program, only 3.9% of males did so.
- Results by race/ethnicity were fairly comparable, with the highest percent of students participating in a non-traditional program being two or more races (37.9%).
- Students in the economically disadvantaged sub-category had the highest rates of non-traditional participation (29.7%).

Table 15. Indicator 6S1 Results by Subpopulations

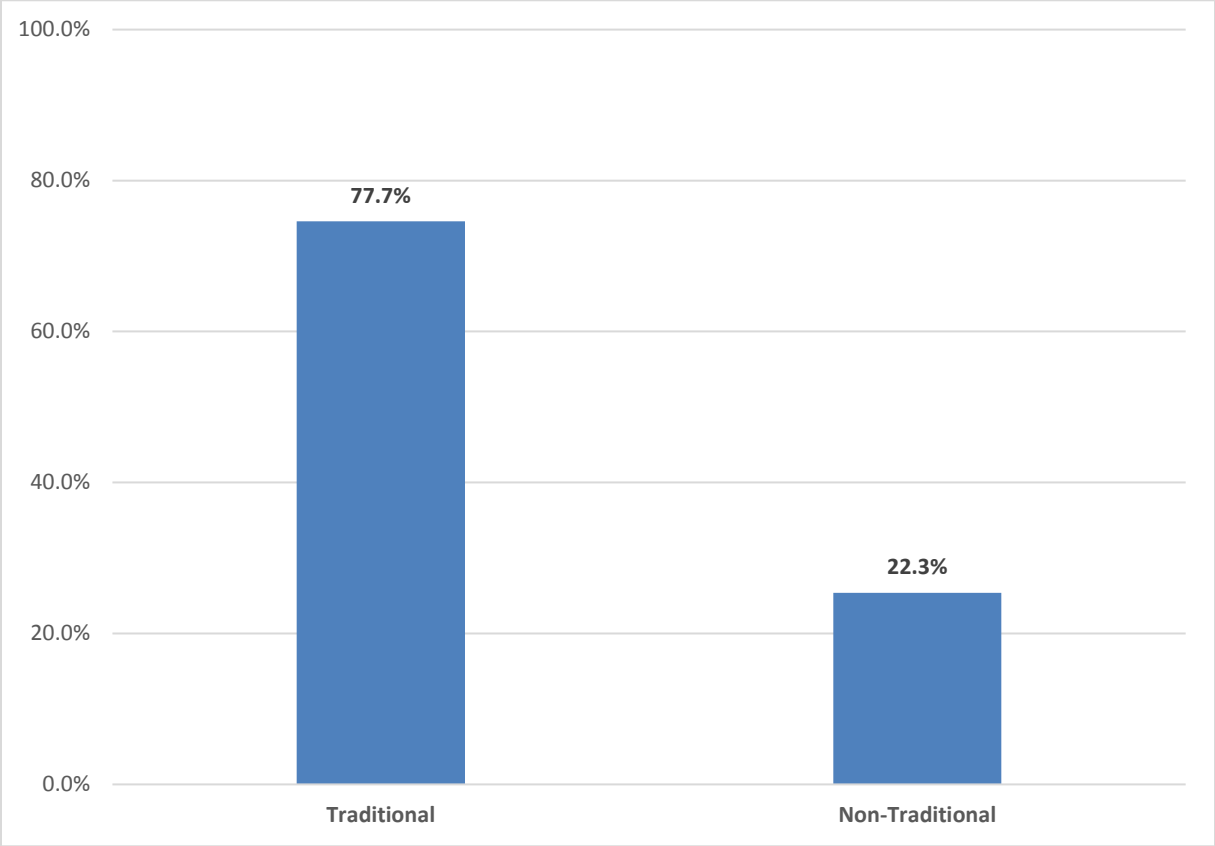
(6S1) Non Traditional Participation			
Gender	**# of Students in Numerator**	**# of Students in Denominator**	**Percent of Students**
Male	*	(7,000-7009)	**<=5.0%**
Female	3,150	4,408	**71.5%**
Race/Ethnicity			
American Indian	50	160	**31.3%**
Asian	27	98	**27.6%**
Pacific Islander	3	15	**20.0%**
Black	36	130	**27.7%**
Hispanic	414	1,478	**28.0%**
White	2,821	9.390	**30.0%**
Two or more races	77	203	**37.9%**
Special Populations			
Individuals With Disabilities	260	1,216	**21.4%**
Economically Disadvantaged	797	2,687	**29.7%**
Single Parents	87	320	**27.2%**
Displaced Homemakers	*	12	**<10.0%**
Limited English Proficient	39	142	**27.5%**
Migrant	*	*	**NA**

6S2 – Non-traditional Completion

In order to calculate the non-traditional completion indicator, CTE concentrators who completed a non-traditional program during the reporting year were identified. The total number of concentrators in a non-traditional field (as determined by CIP code provided) was determined using the latest guidelines for occupational fields that are considered non-traditional for each gender. This is compared to each concentrator's gender to determine if a concentrator is a non-traditional student (see description of indicator 6S1 for examples).

Approximately 22.3% of students completing a non-traditional program were non-traditional students. This figure represents a decrease from the 2015-16 school year in which 23.0% of non-traditional students completed a non-traditional program.

Figure 15. Percent of Students Completing Non-Traditional Programs by Student Status



Indicator 6S2 by Subpopulations:

Overall results by subpopulations are reported in the following table. Highlights of these results include:

- Similar to indicator 6S1, a significant difference in results by gender is observed. While 59.6% of female concentrators completed a non-traditional program, less than 5.0% of males did so.
- Results by race/ethnicity show two or more race students with the highest rates of non-traditional completion (40.0%).
- Among special populations, economically disadvantaged students showed the highest completion rates (24.9%)

Table 16. Indicator 6S2 Results by Subpopulations

(6S2) Non Traditional Completion			
Gender	**# of Students in Numerator**	**# of Students in Denominator**	**Percent of Students**
Male	21	1,017	**<=5.0%**
Female	330	554	**59.6%**
Race/Ethnicity			
American Indian	5	13	**38.5%**
Asian	4	13	**30.8%**
Pacific Islander	*	*	**NA**
Black	*	(10-19)	**<5.0%**
Hispanic	37	172	**21.5%**
White	295	1,335	**22.1%**
Two or more races	10	25	**40.0%**
Special Populations			
Individuals With Disabilities	9	105	**8.6%**
Economically Disadvantaged	59	237	**24.9%**
Single Parents	15	69	**21.7%**
Displaced Homemakers	*	*	**NA**
Limited English Proficient	*	*	**NA**
Migrant	*	*	**NA**

CTSO Participation

Approximately 29.6% of CTE concentrators (unduplicated N=1,049) participated in a CTSO during the 2016-2017 school year. This represents a slight decrease in the percentage of students participating in CTSO as compared to 29.8% in 2015-16. The highest percent of concentrators participating in CTSO were members of FFA (57.3%), and this is consistent with past years. There was an increase in FCCLA participation from 4.9% for 2015-2016 to 6.4% in 2016-2017.

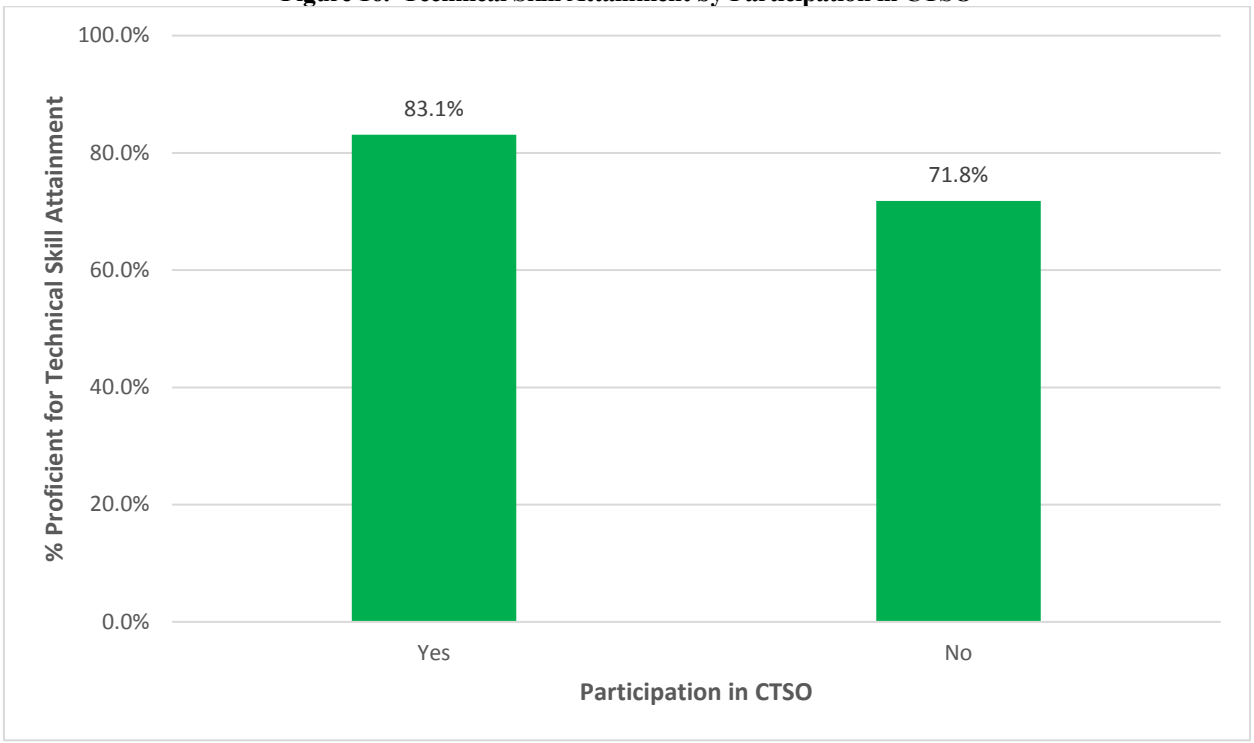
Table 17. CTSO Participation by Organization

Organization	Count*	Percent of CTSO
FFA	651	57.3%
SkillsUSA	198	17.4%
FBLA	160	14.1%
FCCLA	73	6.4%
DECA	54	4.8%
Total	**1,136**	**100.0%**

*Students may have participated in more than one CTSO.

The following graph shows the percent of students proficient in technical skill attainment during the 2016-2017 school year by CTSO participation. As shown, CTE concentrators who participated in CTSO had higher overall technical skill proficiency (83.1%) than those who did not participate in CTSO (71.8%).

Figure 16. Technical Skill Attainment by Participation in CTSO



CTE Programs at Wyoming Schools

Participation in Job Training & Work Based Learning

The table below shows results for the types of job training activities CTE concentrators participated in. Job shadowing was the most common form of work based learning (41.1%) followed by community service internships (19.6%) and work-experience (17.7%).

Table 18. Job Training by Type

Job Training Type	Count*	Percent of Programs
Job Shadowing	925	41.1%
Community service learning	442	19.6%
Work-experience internship	399	17.7%
School-based enterprises	288	12.8%
Mentorship	148	6.6%
Other**	20	0.9%
Cooperative Education	21	0.9%
Apprenticeship	7	0.3%
Total	2,250	100.0%

*Students may have participated in more than one activity.

**Other types of job training specified included:

Clinicals (14)
FFA-SAE (5)
Child Care (1)

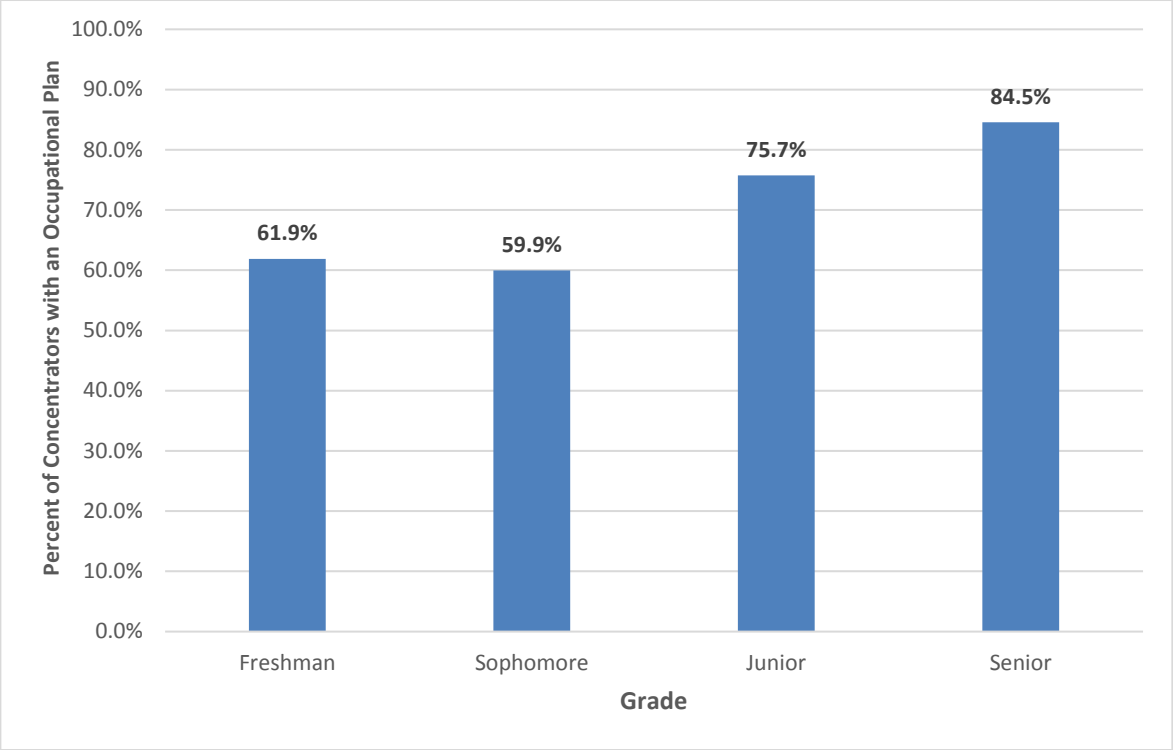
Occupational Plan

During 2016-2017, 2,793 reporting CTE concentrators (78.7%) had an occupational plan. This is a significant increase from 2015-2016 (65.8%).

Occupational Plan by Grade

Senior CTE concentrators were most likely to have an occupational plan as compared to all other grade levels. This is expected as students have a greater opportunity to have an occupational plan as they progress in their schooling. Overall distribution of students at each grade level with occupational plans are similar with results from 2014-2015 and 2015-2016.

Figure 17. Occupational Plan by Grade



Integrated Instruction

Information on integrated instruction was also collected from secondary schools during the 2016-2017 school year. Schools were asked to describe the methods they use to provide integrated instruction to students. Schools reported a varied number of ways that they integrate CTE and academic instruction, however several themes emerged. In particular, as described in the following table, schools noted that they integrate instruction at multiple levels, including at the CTE level, Academic level and/or Teacher level. That said, it was also noted by several schools that academic teachers find it more difficult to incorporate career and technical aspects into their curriculum. Integration was much more likely to take place in CTE classes.

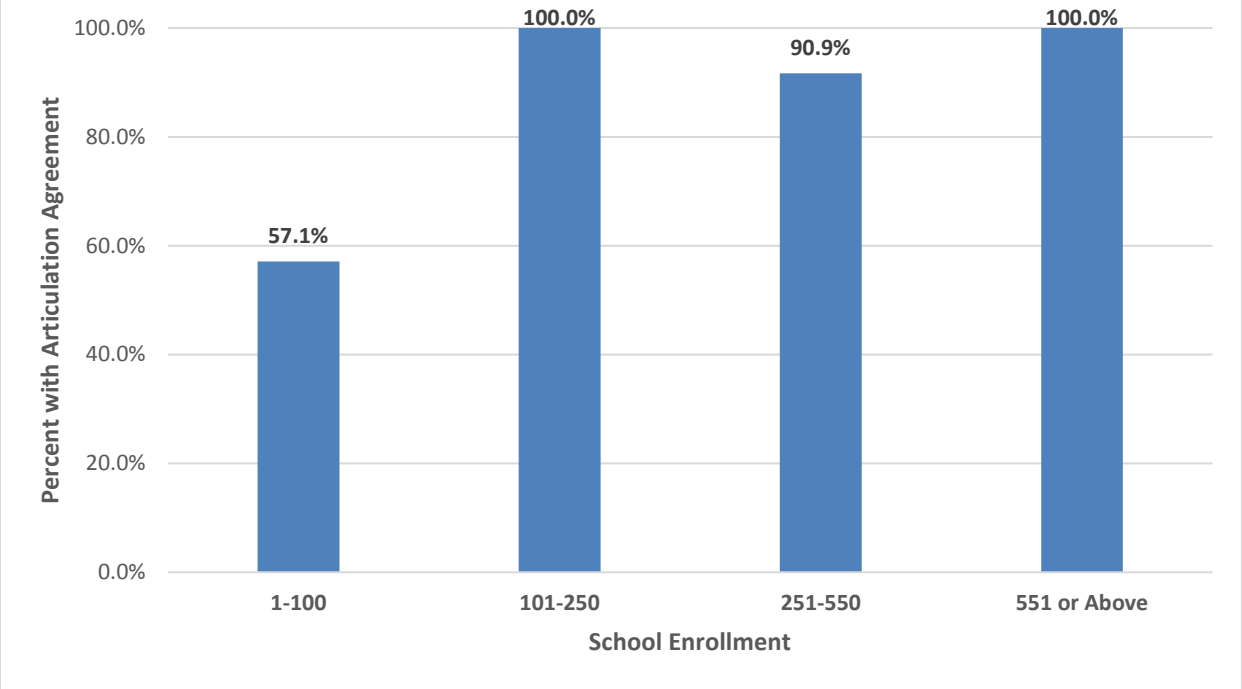
Table 19. Integrated Instruction Activities

CTE Level Integration	Academic Level Integration	Teacher Level Integration
○ CTE classes incorporate reading and math in specific lessons. (examples included "profit projections, cash flow and loan payment schedule lessons in business classes, technical writing related to agriculture, etc). ○ Writing is required in a majority of CTE courses including journal keeping, report writing, and research writing. ○ Integrated through Professional Learning Communities and Individual projects. ○ CTE classes are aligned to the Common Core Standards.	○ English classes incorporate resume writing and career writing opportunities. ○ Discussion and application of "real world" concepts in math and science classes. ○ Word processing and computer skills are incorporated in academic classes. ○ Integrate technology and multimedia to complete projects in academic classes.	○ Teachers participate in groups that include a mix of CTE and academic teachers. They work together on various assessment and curriculum planning goals. ○ Team teaching of units between CTE and Academic teachers. ○ Collaboration on class assignments to provide cross curricular activities/lessons

Articulation Agreements and Coordination with Postsecondary Institutions

Data was collected on articulation agreements from 64 secondary schools. Of these schools, 89.1% (n=57) reported having an articulation agreement in place with one or more Wyoming community colleges. Schools with enrollment above 100 students had at or very near 100% existing articulation agreements, 57% schools with enrollment below 100 students had articulation agreements.

Figure 18. Articulation Agreement by School Size



Secondary schools had articulation agreements with a variety of Wyoming colleges. Western WY Community College (15) had the greatest number of articulation agreements with schools. All other community colleges had between 4 and 14 schools with articulation agreements.

Table 20. Number of High Schools with Articulation Agreements by College

Community College	# of High Schools with Articulation Agreements*
Western Wyoming College	15
NWCCD	14
Laramie County Community College	11
Central Wyoming Community College	11
Eastern Wyoming Community College	9
Northwest College	8
Casper Community College	4
University of Wyoming	2
Out of State	2

*Schools may have had articulation agreements with more than one community college

Schools reported brief descriptions of their articulation process for concurrent enrollment (also referred to by some schools as "dual enrollment") classes. Generally, the following activities take place to make courses available for dual credit:

- Once a course is selected, the syllabus is aligned by the high school to fit the requirements of both the high school and college.
- Teachers instruction of concurrent high school courses and course syllabi must be approved by the college.
- Teachers of concurrent high school courses are approved by the college as concurrent teachers.
- Teachers collaborate with the colleges (instructors and department heads) on curricula content, methods, and skills.
- Ongoing communication between the high schools and colleges take place. Types of communication include: 1) regular yearly or semester meetings between high school and college staff; 2) site visits to concurrent classrooms for observation and feedback; 3) regular phone and/or email communications between college and high school staff.

Summary

During the 2016-17 reporting year, the State of Wyoming met Perkins accountability and reporting requirements and continued to undertake activities designed to address the requirements of Perkins IV.

In addition to pathway-aligned assessments, data was obtained on students within a pathway that has an industry-certified exam available (e.g., Culinary ProStart, CNA certification, etc.). For Pre-Engineering concentrators, data on their performance in "Project Lead the Way", a course sequence specific for Pre-Engineering students was also obtained. Since 2012-13, Automotive Technology concentrators have been able to take Electrical Systems & Engine Performance industry-certified exams through National Institute for Automotive Service Excellence (ASE) Assessment.

In addition to these activities, the state has collected all required Perkins data and it has been submitted via the online CAR (postsecondary) and EDFacts (secondary). The following provides a summary of results as well as historical data.

Data was collected and reported for 3,549 CTE concentrators in 64 Wyoming secondary schools. The total number of concentrators was higher than the previous year, see Table 21 below. Among CTE concentrators, results showed that the program areas of Architecture and Construction, Agriculture, Manufacturing, and Hospitality and Tourism were the most popular CTE program areas.

Table 21. CTE Concentrator and Participant Counts

Perkins IV Definitions	2010-11 Results	2011-12 Results	2012-13 Results	2013-14 Results	2014-15 Results	2015-16 Results	2016-17 Results
At the *secondary level*, a **CTE concentrator** is defined as a secondary student who has completed three or more courses in a CTE program, including those who may be currently enrolled in their third course.	4,508	4,377	4,169	4,180	3,491	3,312	3,549
At the *secondary level*, a **CTE participant** is defined as a secondary student who has *completed* one or more courses in a CTE program sequence.[2]	14,978	15,311	13,201	8,653	15,852	16,926	16,498

In the area of academic attainment (1S1 and 1S2), the Perkins IV indicator was divided into two separate indicators for reading and mathematics under Perkins IV. Results showed that 32.95% of CTE concentrators were proficient in reading and 38.30% were proficient in mathematics, see Table 22. Both proficiency rates met 100% of targets. These rates are higher than last year.

Table 22. Academic Attainment Results

Indicators	Perkins IV Measurement Definitions	2010-11 Results	2011-12 Results	2012-13 Results	2013-14 Results	2014-15 Results	2015-16 Results	2016-17 Results
(1S1) Academic Attainment: Reading	Percent of CTE concentrators who have met the proficient or advanced level on the ACT reading assessment administered by the State of Wyoming under Section 1111(b)(3) of the Elementary and Secondary Education Act (ESEA) as amended by the No Child Left Behind Act based on the scores that would be included in the State's computation of adequate yearly progress (AYP) in the reporting year.	74.50	78.50	74.85	30.0	29.5	34.7	33.0
(1S2) Academic Attainment: Math	Percent of CTE concentrators who have met the proficient or advanced level on the ACT math assessment administered by the State of Wyoming under Section 1111(b)(3) of the Elementary and Secondary Education Act (ESEA) as amended by the No Child Left Behind Act based on the scores that would be included in the State's computation of adequate yearly progress (AYP) in the reporting year.	66.65	68.78	68.02	38.0	38.1	41.9	38.3

For technical skill attainment (2S1), Wyoming concentrators were to given the opportunity to take an exam aligned with their program area. There are multiple different types of exams to include Wyoming Pathway Assessments, NOCTI assessments, ASE Automotive and other industry-certified exams, and the 21st Century Skills Assessment. Additionally, engineering students have the opportunity to participate in Project Lead the Way.

As shown in Table 23, 75.08% of CTE concentrators assessed for technical skills were proficient. This proficiency level exceeds the target of 71.86%.

Table 23. Technical Skill Attainment Results

Indicators	Perkins IV Measurement Definitions	2010-11 Results	2011-12 Results	2012-13 Results	2013-14 Results	2014-15 Results	2015-16 Results	2016-17 Results
(2S1) Technical Skill Attainment	Percent of CTE concentrators who passed technical skill assessments that are aligned with industry-recognized standards, if available and appropriate.	72.28	71.11	67.61	73.4	74.5	73.3	75.1

The completion rate (3S1) for 2016-17, i.e. the percent of CTE concentrator students who indicated that they would graduate or otherwise complete secondary education in 2016-17, was 99.5%. This represents an increase of .1% as compared to the prior year, and exceeds the target of 95.0%.

Table 24. Completion Results

Indicators	Perkins IV Measurement Definitions	2010-11 Results	2011-12 Results	2012-13 Results	2013-14 Results	2014-15 Results	2015-16 Results	2016-17 Results
(3S1) Completion	Percent of CTE concentrators who earned a regular secondary school diploma, earned a General Education Development (GED) credential as a State-recognized equivalent to a regular high school diploma (if offered by the State) *or* other State-recognized equivalent (including recognized alternative standards for individuals with disabilities), *or* earned a proficiency credential, certificate, or degree, in conjunction with a secondary school diploma (if offered by the State) during the reporting year.	98.10	95.75	96.41	96.7	96.8	99.4	99.5

Examination of the results for indicator (4S1-Student Graduation Rates) showed that 95.4% of eligible CTE concentrators were reported as graduating, exceeding the target of 94%. This is an increase from last year's figure of 92.9%. Note that this indicator is calculated using 2015-16 data for students who graduated during the prior school year.

Table 25. Graduation Rate Results

Indicators	Perkins IV Measurement Definitions	2010-11 Results	2011-12 Results	2012-13 Results	2013-14 Results	2014-15 Results	2015-16 Results	2016-17 Results
(4S1) Graduation Rate	Percent of CTE concentrators who, in the reporting year, were included as graduated in the State's computation of its graduation rate as described in Section 1111(b)(2)(C)(vi) of the ESEA	94.99	94.01	94.40	93.9	93.1	92.9	95.4

Follow-up information was obtained in the second quarter, (October 1 to December 31, 2016) for concentrators who left secondary education in the 2015-16 school year. Results for 5S1 showed that among concentrators who left, 94.01% were in an advanced placement, i.e. postsecondary education, military, advanced training or employment. This is similar to last year's figure of 95.7%, see Table 26. In addition, this is within 90% of the target of 95%. The majority of students (72.2%) in advanced placement are enrolled in a community college, 4-year university, or in advanced training; 27.4% are employed; and 4.3% are in the military. Additionally, 97.1% of students enrolled in a community college remained in-state. Students most likely to be out of state at time of follow-up were in advanced training/technical school, 4-year university, or in the military.

Table 26. Placement Results

Indicators	Perkins IV Measurement Definitions	2010-11 Results	2011-12 Results	2012-13 Results	2013-14 Results	2014-15 Results	2015-16 Results	2016-17 Results
(5S1) Placement	Percent of CTE concentrators who left secondary education and were placed in postsecondary education or advanced training, in the military service, or employment in the second quarter following the program year in which they left secondary education.	97.34	97.05	97.44	96.3	96.1	95.7	94.0

Examination of non-traditional participation (6S1) showed that 29.9% of students in nontraditional programs were in under-represented gender groups. This represents an increase compared to last year's results, but it fails to meet the target of 33.32%. Similarly, 22.3% of concentrators completing a non-traditional program were in under-represented gender groups (6S2). This also fails to meet the target of 29.86% and is a decrease from the prior year.

Table 27. Non-Traditional Results

Indicators	Perkins IV Measurement Definitions	2010-11 Results	2011-12 Results	2012-13 Results	2013-14 Results	2014-15 Results	2015-16 Results	2016-17 Results
(6S1) Non-Traditional Participation	Percent of CTE participants from underrepresented gender groups who participated in a program that leads to employment in nontraditional fields during the reporting year.	33.15	34.88	33.47	31.6	34.9	28.5	29.9
(6S2) Non-Traditional Completion	Percent of CTE concentrators from underrepresented gender groups who completed a program that leads to employment in nontraditional fields during the reporting year.	31.61	28.75	28.83	30.6	30.1	23.0	22.3

With respect to other CTE activities occurring in the state, trends in CTSO participation were consistent with prior years with 29.6% of CTE concentrators reporting participation in CTSOs. Like last year, the highest proportions of concentrators participated in FFA (57.3%). In addition, a total of 78.7% of CTE concentrators had an occupational plan in place. Participation in job training remained similar to the prior year, with job shadowing being the most popular (41.1%), followed by community service internships and work experience (19.6% and 17.7% respectively). In terms of integrated instruction, schools reported a number of ways that integration is achieved. In particular, schools noted that they integrate instruction at multiple levels, including at the CTE level, Academic level and/or Teacher level: (a) at the teacher level, this typically includes cooperation between academic and CTE teachers on specific units of study; (b) at the CTE level, this typically includes reading and writing integrated into CTE courses; and (c) at the academic level; this typically includes "real world" application in academic math and science classes.

Wyoming met its secondary targets in the areas of academic attainment (reading and math), technical skill attainment, completion, graduation rate, and placement. Targets were not met for 6S1 and 6S2, nontraditional participation and completion. As a result of processes established for local Perkins negotiations and improvement plans, schools are being held accountable for results, which serves as an impetus for progress. Finally, the WDE's new data collection system is allowing for more accurate data collection which has led to more accurate results and reporting.