# SECONDARY CAREER & TECHNICAL EDUCATION

Courses, Programs, Students and Faculty

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COMMUNITY COLLEGES &
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## Letter from the Director

Dear Education Stakeholders,

High-quality career and technical education (CTE) programs across the state are increasing student engagement through the integration of technical and academic skills in hands-on, real-world learning experiences. These programs align with workforce needs and offer clear pathways to industry certifications and postsecondary credentials. As emphasis on CTE grows, it is critically important that we continue to build on our strong foundation and further align education and the workforce and expand opportunities for students.

Meaningful educational data are essential for improving programs and expanding opportunities for students. At the district level, data helps administrators, teachers and counselors make important programmatic and operational decisions that impact the success of their students. At the state level, data provide policymakers and educators information about the students, the programs and opportunities offered to them, and metrics regarding how well they are progressing toward their educational goals. At the local level, data enable communities to understand the impact of the opportunities provided through their school districts.

The Annual Condition of Secondary Career and Technical Education 2021 provides important information on enrollment trends, secondary CTE courses and programs offered, and characteristics of students, secondary teachers and community college faculty for academic years (AY) 2016-2020. Additionally, the report describes four areas of policy interest for implementing high-quality CTE throughout the state.

Ensuring all high school students have consistent and equitable access to globally competitive CTE, work-based learning and concurrent enrollment opportunities is a priority of the State Board of Education and aligns with the state's Future Ready Iowa initiative for 70 percent of Iowans in the workforce to have postsecondary education or training beyond high school by 2025. This work is growing Iowa's future workforce and preparing students for success in college and careers.

Thank you for taking the time to review this report and for your ongoing support of secondary CTE in Iowa. I look forward to working with you to provide Iowans with quality programs, services and opportunities to meet their career and educational goals.

Sincerely,

Dr. Ann Lebo
Director
Iowa Department of Education

## Executive Summary

On July 1, 2019, Iowa began the implementation of the fifth iteration of the federal Carl D. Perkins Act, known as the Strengthening Career and Technical Education for the 21st Century Act (called Perkins V). The previous iteration, the Carl D. Perkins Career and Technical Education Act of 2006 (often referred to as Perkins IV), was in place for over 12 years. Since its inception in 1984, the federal Carl D. Perkins Act has been the main driver of secondary and postsecondary CTE across the nation, providing a framework that links programs, budgeting and finance and accountability. One of the priorities of the State Board of Education is that: all students will have equal access to robust career and technical education, work-based learning experiences and community college credit opportunities through an integrated system. This priority came about because the Iowa Department of Education has the responsibility for implementing HF2392. Signed into law in 2016, HF2392 set forth a forward-looking policy framework for secondary CTE, replacing an archaic vocational education law adopted in 1989 and building off of exceptional practices implemented around the state. If the state HF2392 requirements are placed against those under Perkins V, many similarities and commonalities are seen. In fact, the HF2392 requirements, and the current implementation of the law across the school districts, formed the basis for developing the Perkins V State Plan. The current state effort around the redesign of secondary CTE laid a good foundation for development of the Perkins V State Plan, and its subsequent implementation across school districts.

## Report Highlights

From the tables and figures presented in this report, the following can be said for secondary CTE over the five-year period covering academic years (AY) 2016 through AY2020:

### Secondary CTE Courses and Programs

Over a five-year time period:

The total number of CTE courses and programs offered and taught more or less held steady, with only minor shifts occurring up or down. On a year-to-year basis, there has been a small but steady growth over the five-year period.

- The total number of CTE courses and programs offered and taught more or less held steady, with only minor shifts occurring up or down. On a year-to-year basis, there has been a small but steady growth over the five-year period.
- Small- to medium-sized school districts had growth in the average number of CTE programs offered and taught, whereas the larger school districts had flat growth.
- There was significant growth in the use of college credit contracted courses in secondary CTE programs, nearly 43% over a five-year period, and this growth is related to the size of the school districts with larger ones offering and teaching more college credit contracted courses.
- At the service area level, the growth in CTE programs is similar – some areas are increasing, while other areas are decreasing. It is interesting to note that given that Information Solutions is a new service area, programs within it have increased rapidly from 45 in AY2016 to 83 programs in AY2020.

## Secondary CTE Enrollment

Over a five-year time period:

- Overall enrollment in secondary CTE and overall secondary CTE participation rates remained steady; nevertheless, more recent participation in CTE courses and programs has shown an upward tick. Students in smaller school districts were participating at relatively higher rates in secondary CTE.
- There was a significant growth in student participation in college credit contracted CTE courses, with college credit contracted CTE participation rates were much lower for smaller school districts. The reverse relationship is true for larger school districts.
- CTE student enrollment by grade level declines after 9th grade, with the lower enrollment seen in subsequent grades.
- In general, enrollment of students in all service areas showed an upward trend except in the Information Solutions and Business, Finance, Marketing and Management service areas.

## Characteristics of Secondary Students

Over a five-year time period:

- White students show a slight decline in secondary CTE participation, while there was a slight increase for minority students.
- Hispanic and African American students make up about (70) percent of overall minority secondary student CTE participation. CTE participation for different student population groups has held steady.
- Overall, participation by male students is higher than female students.
- The proportion of secondary CTE students who were eligible for the National School Lunch Program remained steady. Of note, there is a not a significant relationship between the proportion of secondary CTE students who were eligible for the National School Lunch Program and those who were not when it came to CTE course taking.
- There has been a steady rise in annual CTE course taking across grades 9–12.
- The average number of CTE courses taken by a student increased slightly in AY2020.
- The proportion of students taking at least two courses remained steady util AY2017. Since AY2018, that proportion has increased.

## Secondary CTE Human Resources

Over a five-year time period:

- Secondary CTE teacher characteristics have not changed significantly. The secondary CTE teacher is, for the most part, white and, on average, 43 years old.
- The service areas in which secondary CTE teachers have received the most CTE endorsements are more aligned to those service areas that were in place prior to the reconfiguration as a result of HF2392. As HF2392 reaches full implementation, there should be realignment as secondary CTE teachers focus more on the newer service areas or get endorsements in multiple areas.
- Secondary CTE teachers have experienced salary increases, but in real terms there has been very little change in salaries.

» Characteristics of community college CTE faculty teaching high school students have included: being female and white, working as part-time and adjunct faculty and being 49 years old.

## Career and Technical Student Organizations (CTSOs)

Over a five-year time period:

» Secondary CTSO memberships have steadily increased, reaching a record high of 26,743 in AY2020. Some CTSOs are seeing memberships decline, while others have had memberships rise.

» SkillsUSA and FFA had record high memberships in AY2020. FBLA and TSA had a steady rise in memberships. All CTSOs except DECA are continuing a growth trend, with AY2020 an outlier due to limited and canceled spring programming.

## Secondary Career and Academic Planning

» In AY2020*, three hundred and four (N-304*) school districts reported career planning outcomes, including collaboration with internal and external stakeholders to write the district plan.

» The ICAP is a series of 12 high quality, career-related activities that students complete in grades 8–12. While completion of the 12 activities was down during AY2020 due to the Covid-19 pandemic, ICAP completions in AY2020 were still strong.

» In the fall of 2020, a two-part workshop series on re-imagining ICAP and creating best practices trained over 100 educators.

## Work-Based Learning

Over a five-year time period:

» The number of work-based learning courses has increased significantly, especially since AY2018. The same can be said about college credit contracted work-based learning courses, even though the proportion of college credit contracted courses dropped in AY2019 and AY2020.

» More school districts are offering work-based learning courses in AY2020 than they were in AY2016. There has been an increase in the number offering work-based learning courses regardless of school district size.

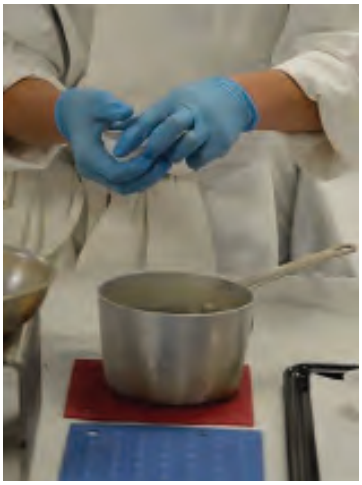
» Other than the Applied Science, Technology, Engineering and Manufacturing there was growth in the number of work-based learning courses in all other service areas (including the unassigned category).

» Participation in work-based learning courses by grade level increases as students move from grade 9 to grade 12 and this has not changed over the five-year period.

» In categorizing participation in work-based learning courses by gender, ethnicity and eligibility for the National School Lunch Program, the figures are consistent with the general secondary CTE student population, except for gender. While in the secondary CTE student population, male student participation in the general CTE coursework is higher, female students participated at a higher rate in work-based learning courses.

## Regional Centers

- Regional centers are clustered around the major metropolitan areas in Iowa, which typically have the larger school districts and the higher high school populations to make the regional center viable. Nevertheless, regional centers are also established where school district sizes are small and located in the rural parts of Iowa. There are still many regions of Iowa where regional centers have not yet been established.
- With the implementation of HF2392, regional planning partnerships (RPPs), through their strategic planning, have begun to explore the viability of regional centers in offering expanded options for students and ensuring equitable access to a variety of high-quality CTE programs which also meet the needs of the regional workforce.
- In FY2020, there were 19 regional centers providing 183 career academy programs to 6,150 high school students from 110 school districts. Among the 19 regional centers, six are located on community college campuses.
- Applied Science, Technology, Engineering and Manufacturing was the most significant service area with 71 career academy programs being offered, followed by Health Sciences (32) and Information Solutions (28). Agriculture, Food & Natural Resources was the smallest service area with only eight career academy programs being offered within a regional center.



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## Chapter 1. Introduction and Overview

On July 1, 2019, Iowa began implementing the Strengthening Career and Technical Education for the 21st Century Act (Perkins V) of the federal Carl D. Perkins Act. Iowa's state plan was submitted to and approved by the Office of Career, Technical, and Adult Education and covers fiscal years 2021 through 2024. The Bureau of Career and Technical Education worked with an advisory committee and several subcommittees to determine expectations for the four years covered by the state plan, thus meeting the Perkins V requirement for external input. In addition to developing a four-year plan, FY20 was spent completing the Comprehensive Local Needs Assessment (CLNA) required for each Perkins recipient (secondary consortiums/ districts and community colleges).

Since its inception in 1984, the federal Carl D. Perkins Act has been the main driver of secondary and postsecondary CTE across the nation, providing a framework that links programs, budgeting, finance and accountability. The Perkins V Law defines career and technical education (CTE) as

> *An educational option that provides learners with the knowledge and skills they need to be prepared for college and careers, giving purpose to learning by emphasizing real-world skills and practical knowledge within a selected career focus.*

CTE in Iowa includes organized educational programs offering a sequence of courses that are directly related to the preparation of individuals for employment in current or emerging occupations. These programs include competency-based, applied learning, which contributes to an individual's academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills and occupational-specific skills. With Perkins V, Iowa is expanding programming for middle school students (5-8); teacher preparation, retention and recruitment and equity. Iowa is also reporting on a new program quality indicator of student participation in work-based learning.

At the secondary level, CTE programs are organized within six broad service areas: agriculture, food and natural resources; information solutions; applied sciences, technology, engineering and manufacturing, including transportation, distribution, logistics, architecture and construction; health sciences; human services and business, finance, marketing and management. Programs within these service areas are further aligned with the National Career Clusters™ Framework. This report focuses on secondary CTE courses, programs, students and faculty, drawing on five years of data (Academic Years 2016-2020).

## Implementing State CTE Legislation in Iowa and Perkins V

One of the State Board of Education's priorities is that all students will have equal access to robust career and technical education, work-based learning experiences and community college credit opportunities through an integrated system. Iowa CTE has its roots in the five broad directional recommendations of a legislatively mandated statewide secondary CTE Task Force. The task force recommendations include career guidance, high-quality CTE programming, work-based learning, teacher preparation and professional development and regional partnerships/regional centers. Implementation focuses on individual career and academic plans (ICAP), district-wide career guidance and development, regional planning partnerships (RPPs), multi-year plans, program approvals, fiscal responsibility and budgeting:

1. Individual Career Academic Plan (ICAP) and Career Planning – Each district is required to have a team in place to work with students on career planning and submit a plan to the state. Each district can choose from state-approved career development software to use with students; reporting on that use is required. All 8th grade students are required to have an ICAP in place and have it reviewed yearly.
2. There are 15 Regional Planning Partnerships around the state that are aligned with the community college regions. These partnerships have state maintenance of effort funding to assist with expanding career and technical education programs at the secondary level, work with the districts on professional development, determine if a regional career center is needed to provide equitable career courses for all students and review program approvals for all districts.
3. The State Board-approved standards and benchmarks for all service areas of CTE education and program approvals are now mandatory for all CTE programs. The state is in the third year of program reviews with 20.0 percent of programs being reviewed each year. Once the Regional Planning Partnerships have reviewed and worked with the districts to identify goals, they are forwarded to the Department of Education for review.

With the implementation of Perkins V, a comprehensive local needs assessment is now completed once every two years by the federal funds' local recipients. The needs assessment includes a review of CTE student performance, program quality, labor market needs, educator development and special populations' access to programs of study. At the local level, the driving force is data-driven decision-making requiring school districts to review student performance, including those students who fall into the different special population categories. Using these data, school districts engage a wide variety of stakeholders to develop their accountability framework under Perkins V, thus connecting the accountability framework to the local needs assessment. The results of this work are submitted as part of the local application for federal funds. In this regard, Perkins V strongly ties together planning, payment, program and performance – the four Ps. The current state effort around secondary CTE lays a good foundation for developing the four Ps within the Perkins V State Plan and its subsequent implementation across school districts.

## Implementing Federal CTE Legislation in Iowa

Iowa receives over $13 million annually in Perkins funds. The Iowa Department of Education is designated as the state eligible agency (SEA). It is responsible for distributing these funds to 89 local eligible agencies (LEAs), including the 15 community colleges; 44 Perkins consortia, with each consortium made up of multiple school districts and 30 individual school districts. Of the total funds received by Iowa, 85.0 percent is distributed to LEAs while 15.0 percent is used for state CTE leadership and administration. The basis for how these funds are allocated, distributed and expended is outlined in Iowa's state plan as a requirement under Perkins V.

A key feature in meeting the requirements under Perkins IV was a set of accountability indicators (prescribed in the law itself). Secondary CTE programs were measured by six accountability indicators:

1S1: Academic Attainment in Reading/ Language Arts
1S2: Academic Attainment in Mathematics
2S1: Technical Skills Attainment
3S1: Secondary School Completion
4S1: Student Graduation Rate
5S1: Secondary Placement
6S1: Nontraditional Participation
6S2: Nontraditional Completion

In the transition year (FY20), it was not required to report data on performance indicators to the U.S. Department of Education. Table 1.1 shows how Iowa has performed relative to the annual targets since AY2016. In Academic Years 2016-2018, Iowa has met or exceeded nearly all targets.

TABLE 1.1: STATE-LEVEL SECONDARY PERKINS ACCOUNTABILITY INDICATORS: TARGET AND PERFORMANCE

| | 1S1 | | 1S2 | | 2S1 | | 3S1 | |
|---|---|---|---|---|---|---|---|---|
| Academic | Target | Actual | Target | Actual | Target | Actual | Target | Actual |
| 2015 | 79.0% | 79.4% | 78.0% | 84.6% | 91.0% | 92.5% | 93.0% | 93.3% |
| 2016 | 80.0% | 99.0% | 80.0% | 99.0% | 92.0% | 93.0% | 93.0% | 97.0% |
| 2017 | 80.0% | 81.7% | 83.0% | 80.1% | 92.0% | 93.0% | 93.0% | 99.0% |
| 2018 | 80.0% | 81.0% | 85.0% | 80.6% | 92.6% | 92.1% | 93.5% | 89.0% |
| 2019 | See Table 1.2 | | | | | | | |
| 2020 | See Table 1.2 | | | | | | | |

| | 4S1 | | 5S1 | | 6S1 | | 6S2 | |
|---|---|---|---|---|---|---|---|---|
| Academic | Target | Actual | Target | Actual | Target | Actual | Target | Actual |
| 2015 | 93.0% | 92.7% | 88.0% | 87.9% | 45.0% | 38.0% | 36.0% | 29.5% |
| 2016 | 93.0% | 97.0% | 88.0% | 93.0% | 40.0% | 38.0% | 34.0% | 34.0% |
| 2017 | 93.0% | 98.0% | 88.0% | 94.0% | 38.0% | 41.0% | 30.0% | 32.0% |
| 2018 | 93.0% | 88.8% | 89.0% | 86.8% | 38.5% | 42.3% | 29.5% | 34.5% |
| 2019 | See Table 1.2 | | | | | | | |
| 2020 | See Table 1.2 | | | | | | | |

In FY21, the Department will start collection under the newly established targets for Perkins V, which include:

- (1S1) Graduation rate
- (2S1) Academic Attainment in Reading/Language Arts
- (2S2) Academic Attainment in Math
- (2S3) Academic Attainment in Science (NEW)
- (3S1) Percentage of CTE concentrators who, in the second quarter after exiting from secondary education, are in postsecondary education or advanced training, military service or a national service program, or are employed
- (4S1) Percentage of concentrators in programs/programs of study that lead to non-traditional fields

An additional secondary indicator focuses on program quality. Iowa's program quality indicator is:

- (5S3) Participation in work-based learning

TABLE 1.2: PERKINS V PERFORMANCE INDICATOR TARGETS

| Performance Indicator Code | Performance Indicator | (Baseline) 2019-20 | (Year 1) 2020-21 | (Year 2) 2021-22 | (Year 3) 2022-23 | (Year 4) 2023-24 |
|---|---|---|---|---|---|---|
| **Secondary** | | | | | | |
| 1S1 | Four-Year Graduation Rate | 92.58% | 93.00% | 93.25% | 93.50% | 93.75% |
| 2S1 | Academic Proficiency in Reading/Language Arts | 65.75% | 66.00% | 66.25% | 66.50% | 66.75% |
| 2S2 | Academic Proficiency in Mathematics | 61.75% | 62.00% | 62.25% | 62.50% | 62.75% |
| 2S3 | Academic Proficiency in Science | 58.00% | 58.25% | 58.50% | 58.75% | 59.00% |
| 3S1 | Post-Program Placement | 89.09% | 89.50% | 90.00% | 90.50% | 91.00% |
| 4S1 | Non-traditional Program Concentration | 14.60% | 14.60% | 15.00% | 15.25% | 15.50% |
| 5S2 | Program Quality - Attained Postsecondary Credits | 6.00% | 7.00% | 8.00% | 9.00% | 10.00% |
| 5S3 | Program Quality - Participated in Work-Based Learning | 6.00% | 7.00% | 8.00% | 9.00 | 10.00% |

Table 1.2 shows Iowa's 2019-2020 performance/baseline and then the State Determined Levels of Performance (SDLPs), i.e., targets for academic years 2020-2021, 2021-2022, 2022-2023 and 2023-2024. Perkins V brings a greater focus on data and accountability and includes a few notable changes. It begins by explicitly defining who is included in the accountability system. It then outlines the process for setting performance targets, which includes broad consultation of stakeholders. Finally, a new initiative toward increasing opportunities for special populations is addressed, which emphasizes the disaggregation of data to identify the gaps and disparities in performance between groups of students and notes how to address them.

Accountability details under Perkins V include the following: 1) a secondary CTE concentrator is explicitly defined; 2) except for the nontraditional indicator, all other indicators are based on the accountability framework laid out under the Every Students Succeeds Act (ESSA) state plan; 3) for every indicator, performance has to be measured for different sub-populations, and these are the same listed in ESSA, with a couple of exceptions; 4) states consult with stakeholders to develop state-level target levels of performance for each indicator for academic years 2020-2021, 2021-2022, 2022-2023 and 2023-2024 and 5) states will need to address performance gaps for all indicators, as well as gaps among the different sub-populations for each indicator, and target federal funds to develop strategies for addressing these gaps. The longitudinal data used for this report places Iowa in a favorable position to complete the accountability requirements under Perkins V.

## Methodology

Data from multiple sources were used to generate this report. The data source used for Chapters 2-5 includes Student Reporting in Iowa (SRI), the Iowa Basic Educational Data Survey (BEDS), the Iowa Board of Educational Examiners (BOEE) database and the Iowa Department of Education Community College Management Information System (MIS). Student Reporting in Iowa provides data on courses a student took or was taking in a given academic year, as well as student demographics. Data from the BEDS, along with data from the BOEE database, provide information on K-12 CTE teachers. The Iowa Department of Education Community College Management Information System was used to gather information on community college faculty teaching college-credit contracted CTE courses to high school students.

Chapter 6 presents data on Career and Technical Student Organizations (CTSOs) that comes from the Iowa Department of Education and the national CTSOs. Chapter 7 uses career guidance data from the Consolidated Accountability and Support Application and the Comprehensive School Improvement Plan. With SRI data, chapter 8 summarizes work-based learning courses and students who took these courses. Chapter 9 of this report also utilizes data gathered from a survey administered by the Division of Community Colleges and Workforce Preparation at the Iowa Department of Education for the purposes of obtaining information on regional centers.

The School Courses for the Exchange of Data (SCED) and the Classification of Instructional Programs (CIP) were used to calculate the number of secondary CTE courses and programs offered. The SCED code provides information about the course topic and course subject area. For example, in chapter 8, work-based learning courses are identified by the last two digits of the five-digit SCED code. If the last two digits of a SCED code is 98, this course is usually a work-based learning course. Similar to the SCED code, the CIP code indicates what instructional program a CTE course belongs to. In this report, a unique SCED code in a given school district was identified as a secondary CTE course instance. A similar approach was used to identify secondary CTE program instances. The number of unique state student IDs was employed to indicate unduplicated secondary CTE enrollment.

## The Report Layout

The report is divided into two main sections: Section I presents five-year longitudinal data (2015-16 to 2019-20) on participation in secondary CTE courses and programs; secondary CTE enrollment patterns; CTE student characteristics and secondary CTE teacher resources. Section II briefly describes three aspects of CTE programming—career and technical student organizations (CTSOs), career guidance and regional centers—which are coming to the forefront as HF2392 moves to full implementation across public school districts in Iowa.

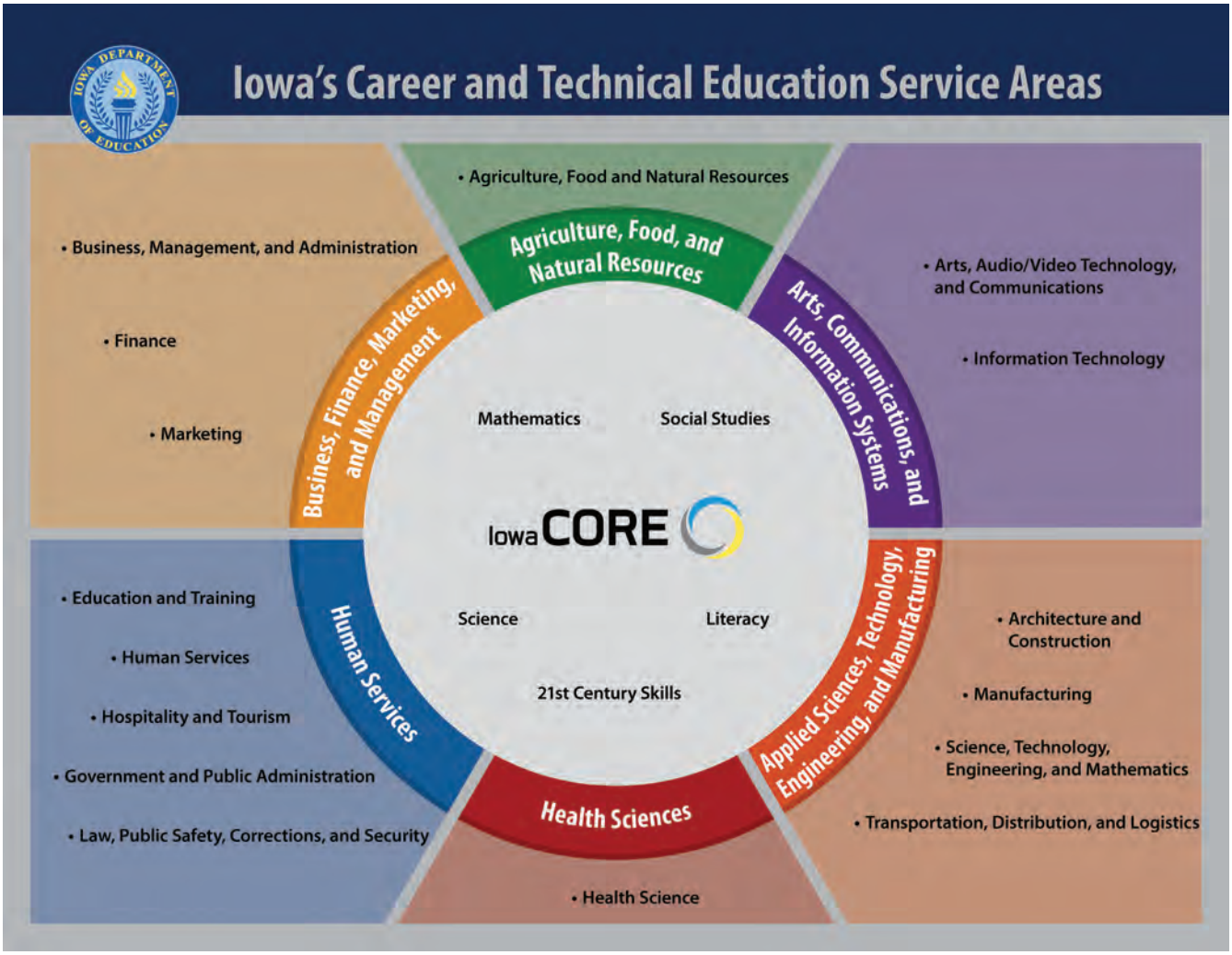
## Section I: Trends in Secondary Career and Technical Education

## Courses and Programs, Enrollment, Student Characteristics and Instructors

## Chapter 2. Secondary CTE Courses and CTE Programs

Career and technical education's (CTE) direct and explicit focus on preparing students for specific ranges of occupations has resulted in a long history of interest and involvement in educational, occupational and industrial classification systems. The National Career Clusters™ Framework provides a way for schools to organize instruction and student experiences around sixteen broad categories that together encompass all occupations from entry through professional levels. The clusters are groupings of careers with similar skills or common themes based on industry groups. They help parents, employers and those in the educational system understand how curriculum relates to the career opportunities students will choose and which schools must prepare them.

At the secondary level in Iowa's public school districts, CTE programs are organized within six service areas, as defined in Iowa Code section 256.11(5) (h). Iowa has made a conscious effort to align these service areas to the National Career Clusters™ Framework, as shown in the graphic below.



Realigned in 2016, the six service areas broadly define the career pathway focus the student may have when he or she determines in which courses and programs they choose to enroll. The six service areas now being used by school districts to meet the requirement to offer and teach CTE programs have a much broader span and scope than what existed before the implementation of HF2392. There were three changes to these original six services areas:

1) Business and marketing were combined into one service area;
2) Family and consumer sciences was reconfigured as Human Services to include a more extensive array of programs; and
3) Information Solutions was introduced as a new service area to reflect the importance of the corresponding career clusters to current and future workforce needs.

## Secondary CTE Courses and Programs

Iowa code (Chapter 12) requires that every public school district offer and teach a minimum of three sequential CTE units within at least four of the six service areas. Each unit may consist of one or more courses depending on classroom and lab time; however, the most common configuration is a (Carnegie) unit comprised of two 0.50 unit courses. Three consecutive "Carnegie" CTE units equates to a basic CTE program. This report defines a course as a combination of a particular SCED code and a specific school district—a course instance. Similarly, a program is obtained by combining a particular CIP code and a specific school district—a program instance.

Additionally, secondary students in Iowa have access to college credit coursework through a variety of means, most of which are at no (or low) cost to the student. Reported throughout this document are the data for college credit CTE courses contracted through one (or more) of Iowa's community colleges. This section summarizes all of the CTE courses and CTE programs taught during AY2016-AY2020 for students in grades 9-12 in Iowa.

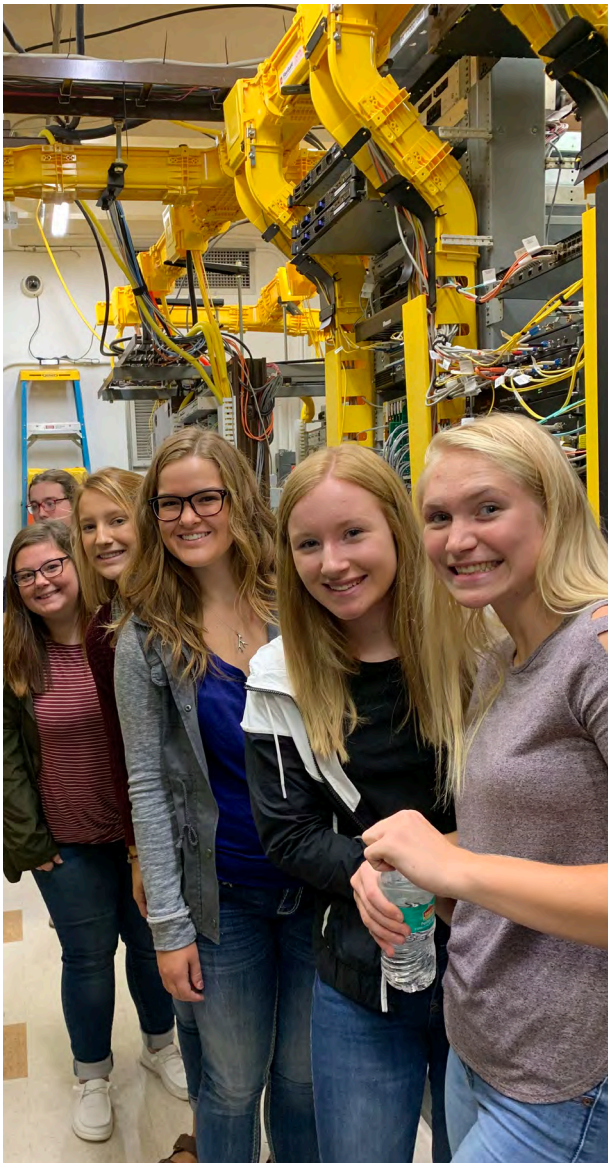
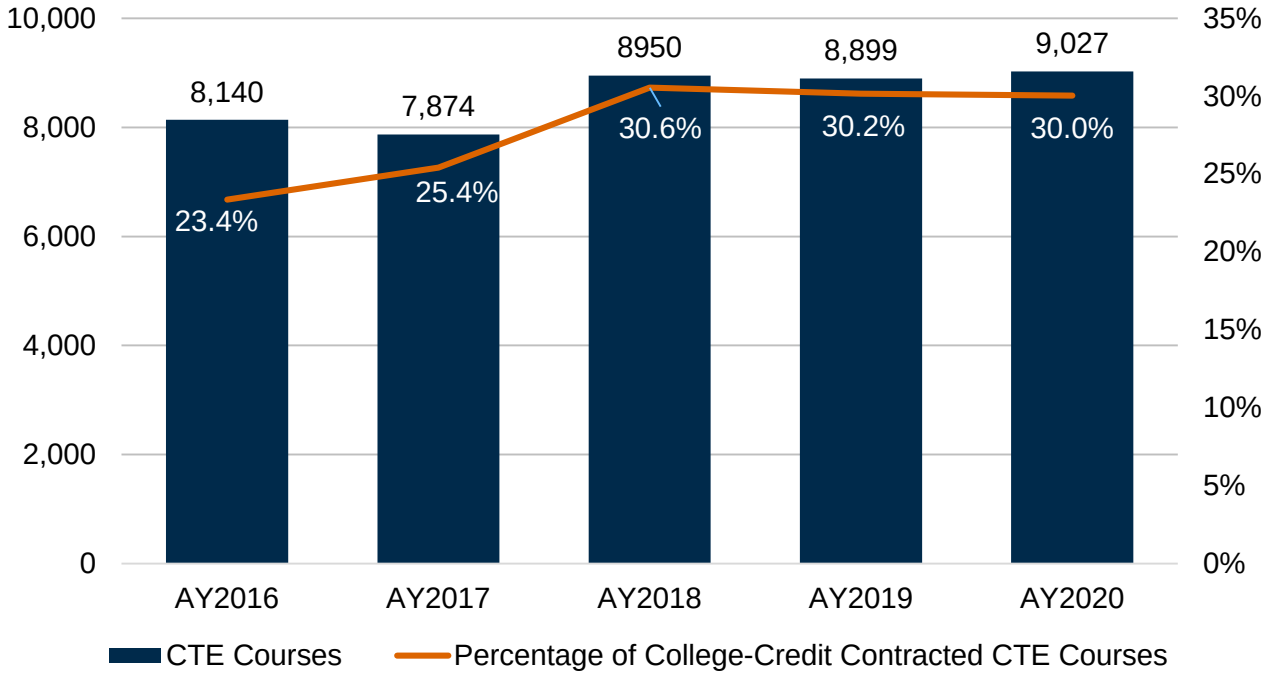


FIGURE 2.1: NUMBER OF CTE COURSES AND PROPORTION OF COLLEGE-CREDIT CONTRACTED CTE COURSES: AY16-AY20*




** Due to an error in calculation in last year's report, the percentage of college-credit contracted CTE courses for AY18 was updated.*

Figure 2.1 reports secondary CTE courses taught since AY2016. In AY2020, 9,027 secondary CTE courses were offered in Iowa, which is a 1.4 percent increase from the year before, with a compound annual growth rate of 2.6 percent over a five-year period (AY2016-AY2020). Figure 2.1 also reports the change of college credit contracted CTE courses. The proportion of college credit contracted CTE courses increased steadily; in AY2016, these courses only accounted for 23.4 percent of the total secondary CTE courses, whereas in AY2020, 30.0 percent of all secondary CTE courses were college credit contracted courses, which is a little over a 42.0 percent increase.

TABLE 2.1: AVERAGE NUMBER OF CTE COURSES BY SCHOOL DISTRICT SIZE: AY16-AY20

| High School Student Enrollment | AY16 | AY17 | AY18 | AY19 | AY20 | CAGR* |
|---|---|---|---|---|---|---|
| <100 | 17.9 | 16.2 | 19.0 | 17.5 | 18.7 | 1.1% |
| 100-299 | 23.0 | 22.8 | 25.5 | 25.4 | 25.7 | 2.8% |
| 300-499 | 29.5 | 28.3 | 33.6 | 33.2 | 33.5 | 3.2% |
| 500-1249 | 30.7 | 30.8 | 35.2 | 35.3 | 37.7 | 5.3% |
| 1250-3999 | 36.8 | 36.3 | 42.0 | 43.8 | 45.2 | 5.3% |
| >4000 | 70.0 | 65.8 | 62.8 | 64.0 | 62.8 | -2.7% |
| Total | 26.3 | 25.7 | 29.4 | 29.4 | 30.1 | 3.4% |

*Note: * CAGR=Compound Annual Growth Rate*

Table 2.1 displays the average number of CTE courses offered by school district size; Table 2.2 shows the average number of college credit contracted CTE courses by school district size. In this report, school district size was indicated by high school student enrollment. More information on high school enrollment can be obtained at https://www.educateiowa.gov/education-statistics.

Compared to AY2019, the average number of CTE courses increased in all school districts except for those with an enrollment of more than 4000 high school students. In terms of compound annual growth rate, school districts with a high school enrollment of 1,250-3,999 and districts with a high school enrollment of 500-1,249 have grown by 5.3 percent. School districts with a high school enrollment of 4,000 or more have decreased by 2.7 percent. As to the average number of college credit contracted CTE courses, only school districts with an enrollment of more than 4,000 high school students experienced a decrease. The number of CTE courses and the number of college credit contracted CTE courses were positively correlated to school district size, as larger schools offered more of both high school and college credit contracted CTE courses (see Tables 2.1 and 2.2).

TABLE 2.2: AVERAGE COLLEGE-CREDIT CTE COURSES BY SCHOOL DISTRICT SIZE: AY16-AY20

| High School Student Enrollment | AY16 | AY17 | AY18 | AY19 | AY20 | CAGR* |
|---|---|---|---|---|---|---|
| <100 | 2.9 | 2.5 | 4.6 | 3.7 | 4.6 | 12.2% |
| 100-299 | 4.2 | 4.7 | 6.3 | 6.0 | 7.1 | 14.0% |
| 300-499 | 7.2 | 7.2 | 11.7 | 11.4 | 11.4 | 12.2% |
| 500-1249 | 8.5 | 9.4 | 11.6 | 12.0 | 13.8 | 12.9% |
| 1250-3999 | 12.7 | 13.7 | 17.3 | 18.1 | 18.4 | 9.7% |
| >4000 | 34.0 | 34.3 | 32.2 | 32.6 | 25.6 | -6.8% |
| Total | 6.0 | 6.1 | 6.5 | 9.0 | 9.9 | 22.3% |

*Note: * CAGR=Compound Annual Growth Rate. Due to an error in calculation in last year's report, the average number of college-credit contracted courses offered by school district size for AY18 was updated.*

Figure 2.2 displays the total number of secondary CTE programs (at least three units of sequential CTE coursework aligning with a CIP code) taught since AY2016. As shown in Figure 2.2, the number of CTE programs peaked in AY2016 (1,857) and decreased slightly since then. The number of secondary CTE programs in AY2020 has decreased, on a CAGR basis, by less than one percent since AY2016.

FIGURE 2.2: NUMBER OF SECONDARY CTE PROGRAMS: AY16-AY20

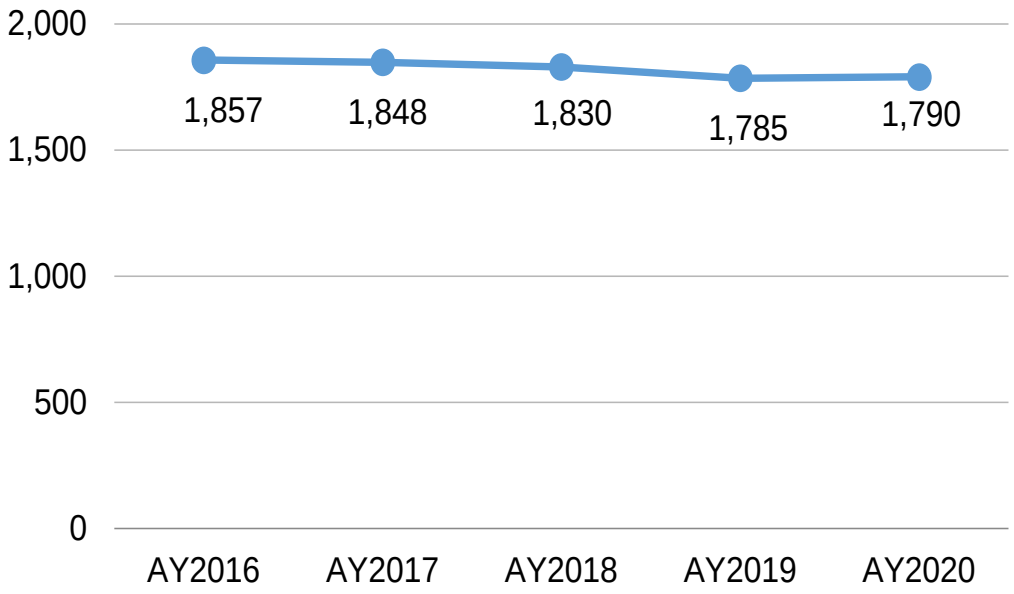


Table 2.3 presents the average number of CTE programs offered by school district size. In larger schools, more CTE programs were offered each academic year. For example, in AY2020, 14.0 secondary CTE programs were offered in school districts with more than 4000 high school students, compared to 4.4 programs offered in school districts with an enrollment less than 100 high school students. Over the five-year period, the average number of CTE programs increased only in school districts with 500-1,249 high school students by less than one percent. Statewide, the average number of secondary CTE programs has decreased less than one percent since AY2016.

Table 2.4 breaks down CTE programs by service area and shows that Applied Science, Technology, Engineering and Manufacturing was the most common service area, with 595 programs taught in AY2020. By contrast, Information Solutions was the smallest service area, with 83 programs provided in the same year. On a CAGR basis, Information Solutions has grown by 16.5 percent, followed by Human Services (1.6 percent) and Health Science (0.9 percent). Business, Finance, Marketing, and Management has decreased by 5.5 percent. Health Sciences and Agriculture, Food & Natural Resources have decreased by less than one percent.

TABLE 2.3: AVERAGE NUMBER OF CTE PROGRAMS BY SCHOOL DISTRICT SIZE: AY16 - AY20

| High School Student Enrollment | AY16 | AY17 | AY18 | AY19 | AY20 | CAGR* |
|---|---|---|---|---|---|---|
| <100 | 4.7 | 4.6 | 4.6 | 4.5 | 4.4 | -1.6% |
| 100-299 | 5.1 | 5.2 | 5.1 | 4.9 | 5.0 | -0.5% |
| 300-499 | 6.3 | 6.3 | 6.4 | 6.1 | 5.9 | -1.6% |
| 500-1249 | 7.3 | 7.4 | 7.3 | 7.5 | 7.8 | 1.7% |
| 1250-3999 | 9.7 | 9.7 | 9.4 | 9.1 | 9.4 | -0.8% |
| >4000 | 14.5 | 15.0 | 14.2 | 13.8 | 14.0 | -0.9% |
| Total | 6.0 | 6.0 | 6.0 | 5.9 | 5.9 | -0.4% |

*Note: * CAGR=Compound Annual Growth Rate*

TABLE 2.4: NUMBER OF CTE PROGRAMS BY SERVICE AREAS: AY16 - AY20

| Career Cluster | AY16 | AY17 | AY18 | AY19 | AY20 | CAGR * |
|---|---|---|---|---|---|---|
| Business, Finance, Marketing and Management | 406 | 391 | 327 | 323 | 324 | -5.5% |
| Agriculture, Food & Natural Resources | 261 | 263 | 252 | 255 | 259 | -0.2% |
| Information Solutions | 45 | 45 | 75 | 80 | 83 | 16.5% |
| Applied Science, Technology, Engineering and Manufacturing | 640 | 630 | 672 | 620 | 595 | -1.8% |
| Health Sciences | 144 | 152 | 130 | 140 | 149 | 0.9% |
| Human Services | 361 | 367 | 374 | 367 | 380 | 1.3% |
| Total | 1,857 | 1,848 | 1,830 | 1,785 | 1,790 | -0.9% |

*Note: * CAGR=Compound Annual Growth Rate*

## Chapter Highlights

Over a five-year time period:

- The total number of CTE courses and programs offered and taught more or less held steady, with only minor shifts occurring up or down.
- Small- to medium-sized school districts had growth in the average number of CTE programs offered and taught, whereas the larger school districts had flat or negative growth.
- There was significant growth in the use of college credit contracted courses in secondary CTE programs—42.0 percent over a five-year period—and this growth is related to the size of the school districts, with larger districts offering and teaching more college credit contracted courses.
- At the service area level, the growth in CTE programs is similar. Some areas are increasing, while other areas are decreasing.

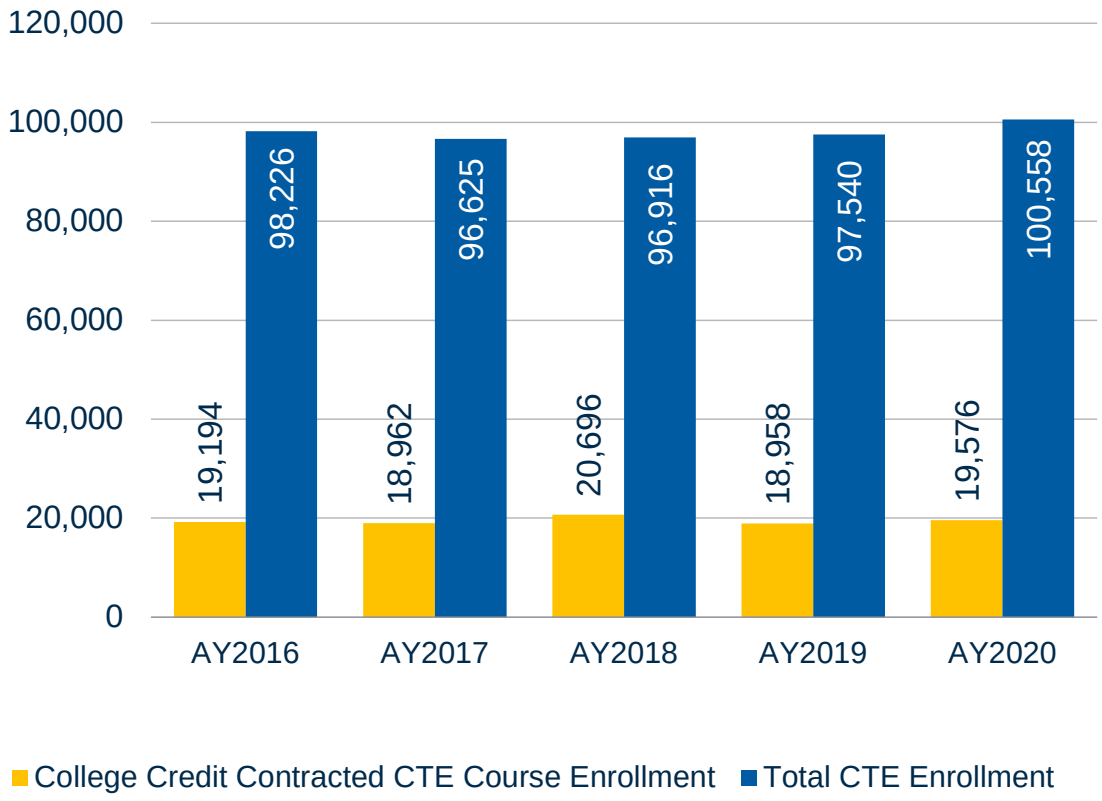
## Chapter 3. Secondary CTE Enrollment

This chapter summarizes secondary CTE enrollment since AY2016. The high school students that took at least one CTE course in a given academic year were identified as CTE students. It should be noted that while school districts are required to offer and teach a minimum of three units in at least four of the six service areas, high school students are free to determine the extent to which they will enroll and complete CTE courses and programs.

### Trends in Secondary CTE Enrollment

Figure 3.1 displays secondary CTE enrollment since AY2016. In AY2020, there were 100,558 students enrolled in at least one CTE course, which is the highest in the past five years. Students who took at least one college credit contracted CTE course were identified as college credit CTE students. Figure 3.1 also presents the number of college credit contracted CTE students during the past five years. In AY2020, 19,576 students (19.5 percent of total CTE enrollment) took at least one college-credit contracted CTE course, which is a 3.3 percent increase from the year before.

FIGURE 3.1 SECONDARY CTE AND COLLEGE-CREDIT CONTRACTED CTE ENROLLMENT: AY16 - AY20



Over the past five years, the secondary CTE participation rate in Iowa was approximately 66.0 percent. As shown in Figure 3.2, the proportion of CTE enrollment in grades 9-12 increased from 66.5 percent in AY2016 to 69.8 percent in AY2020. The change in secondary CTE participation rate follows the change in total secondary CTE enrollment.

Figure 3.3 displays CTE enrollment by school district size. In this report, school district size was indicated by high school student enrollment. It appears that school districts with an enrollment of 100-299 high school students had the largest secondary CTE enrollment in all years, except for AY2020. In AY2020, school districts where the high school enrollment was 1,250-3,999 students had the highest CTE enrollment (23,511).

FIGURE 3.2 SECONDARY CTE PARTICIPATION RATE: AY16 - AY20

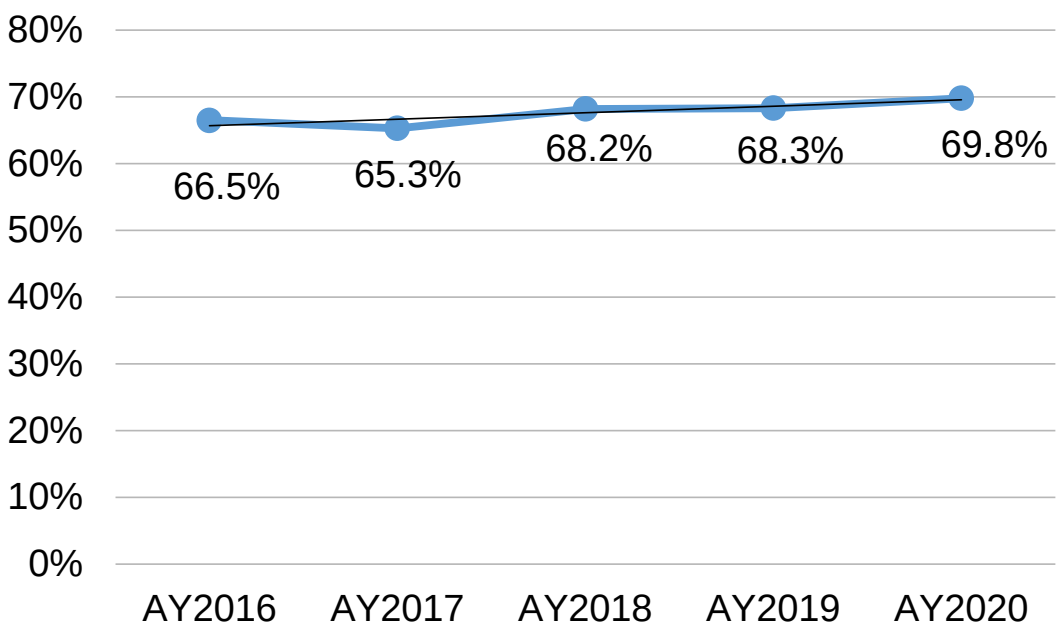


FIGURE 3.3: TOTAL COMBINED SECONDARY CTE ENROLLMENT BY SCHOOL DISTRICT SIZE: AY16 - AY20

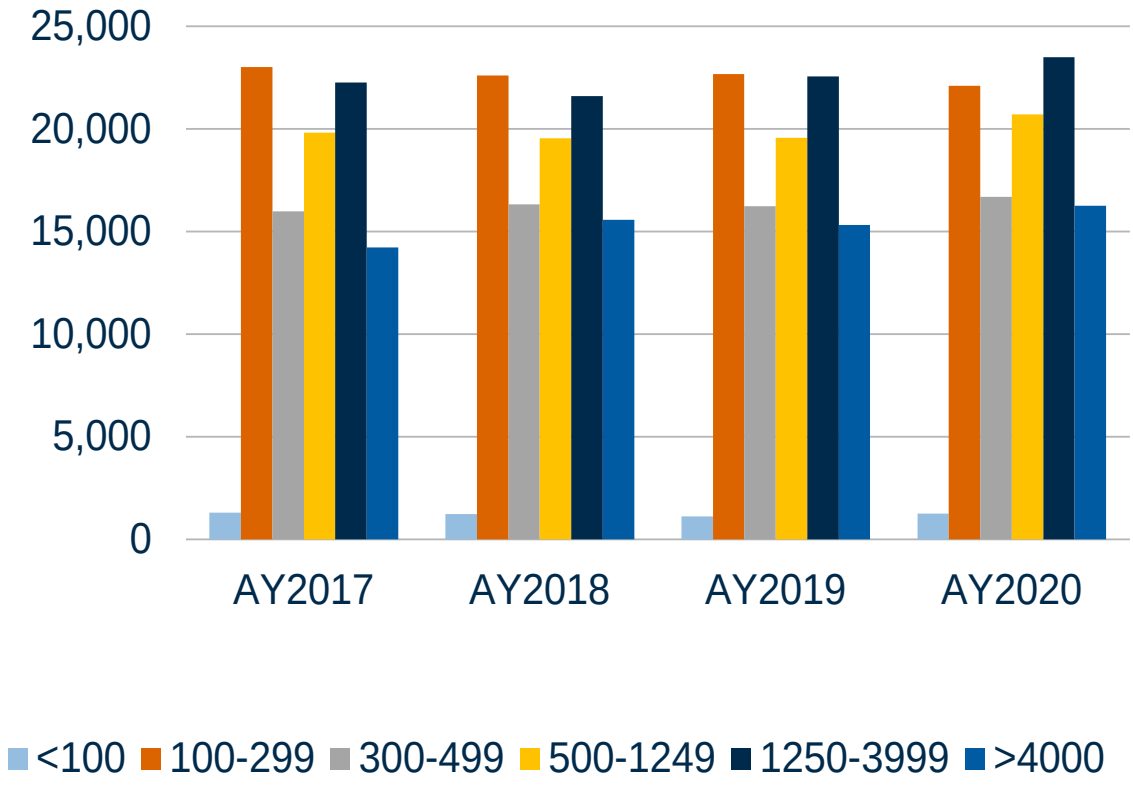



Figure 3.4 and Table 3.1 summarize CTE participation rate by school district size. When observing the year-to-year average over the five-year period, school districts with an enrollment of 100-299 high school students had the highest secondary CTE participation rate in all years except for AY2018. School districts with a high school enrollment of 1,250-3,999 and those with a high school enrollment of more than 4000 had comparatively low CTE participation rates with a five-year average of 60.1 percent and 61.0 percent respectively, even though this group consisted of approximately 24.0 percent of total statewide secondary CTE enrollment. In AY2020, school districts with more than 4,000 high school students had the lowest participation rate at 62.5 percent.

FIGURE 3.4: SECONDARY PARTICIPATION RATE BY SCHOOL DISTRICT SIZE: AY16- AY20

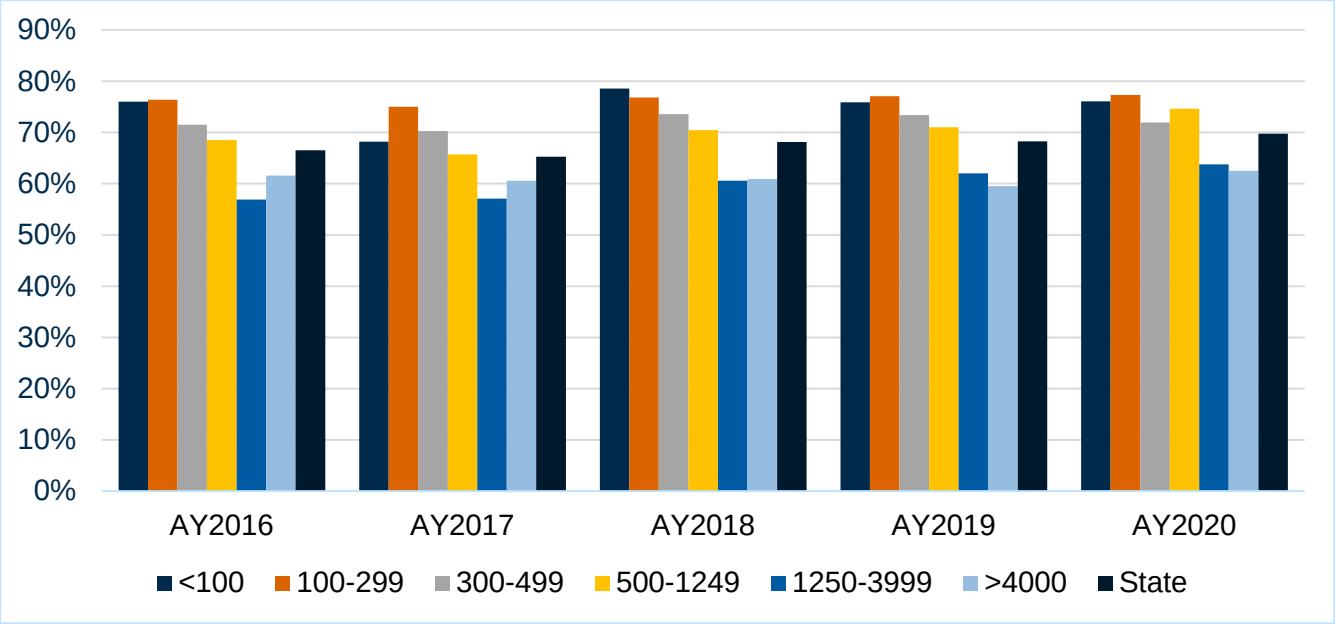



TABLE 3.1: SECONDARY CTE PARTICIPATION RATE BY SCHOOL DISTRICT SIZE: AY16-AY20

| High School Student Enrollment | AY16 | AY17 | AY18 | AY18 | AY20 | Five-Year Average |
|---|---|---|---|---|---|---|
| <100 | 76.0% | 68.2% | 78.6% | 75.9% | 76.1% | 74.9% |
| 100-299 | 76.4% | 75.0% | 76.9% | 77.1% | 77.2% | 76.5% |
| 300-499 | 71.5% | 70.3% | 73.6% | 73.4% | 71.9% | 72.1% |
| 500-1,249 | 68.5% | 65.7% | 70.5% | 71.0% | 74.6% | 70.1% |
| 1,250-3,999 | 56.9% | 57.1% | 60.6% | 62.0% | 63.7% | 60.1% |
| >4,000 | 61.6% | 60.6% | 60.9% | 59.5% | 62.5% | 61.0% |
| Total | 66.5% | 65.3% | 68.2% | 68.3% | 69.7% | 67.6% |

Table 3.2 summarizes the percentage of college credit CTE students out of total secondary CTE enrollment by school district size. It appears that this percentage is positively correlated to school district size: students in larger school districts were more likely to have taken college credit contracted CTE courses. For example, in AY2020 school districts with less than 100 high school students saw only 13.6 percent of secondary CTE students enrolled in at least one college credit contracted CTE course, compared to 23.9 percent of CTE students in school districts with an enrollment of more than 4,000 high school students. It is also worth mentioning that, statewide, the percentage of college credit contracted CTE students stayed steady at 19.5 percent, although there is a slight increase from AY2019 to AY2020.

TABLE 3.2: COLLEGE-CREDIT CTE STUDENTS AS A PERCENTAGE OF TOTAL SECONDARY CTE ENROLLMENT BY SCHOOL DISTRICT SIZE: AY16-AY20

| High School Student Enrollment | AY16 | AY17 | AY18 | AY19 | AY20 | Five-Year Average |
|---|---|---|---|---|---|---|
| <100 | 12.1% | 12.1% | 11.7% | 12.7% | 13.6% | 12.4% |
| 100-299 | 12.3% | 13.3% | 15.5% | 15.3% | 15.0% | 14.3% |
| 300-499 | 16.3% | 15.8% | 19.2% | 18.2% | 19.2% | 17.7% |
| 500-1,249 | 19.9% | 19.1% | 20.7% | 19.0% | 20.3% | 19.8% |
| 1,250-3,999 | 24.6% | 23.6% | 24.2% | 20.1% | 20.4% | 22.6% |
| >4,000 | 27.4% | 29.4% | 29.6% | 26.9% | 23.9% | 27.4% |
| State Total | 19.5% | 19.6% | 21.4% | 19.4% | 19.5% | 19.9% |

Figure 3.5 presents secondary CTE enrollment by grade level. The pattern of CTE enrollment by grade level held steady over the past five years: 9th graders were the largest group averaging 28.8 percent, followed by 10th graders averaging 25.7 percent and students in grades 11 and 12 accounted for 23.8 percent and 21.8 percent of total secondary CTE enrollment, respectively.

Table 3.3 summarizes enrollment by service area and Figure 3.6 displays the change in enrollment by service area since AY2016. Over the past five years, more students enrolled in courses in the Human Services service area than any other service area, and in AY2020, 54,408 students took at least one course in this service area. Students enrolling in courses in the Applied Science, Technology, Engineering and Manufacturing service area were also popular among high school students. In AY2020, 32,091 students took at least one course in this service area. The enrollment increased in all service areas except for in Information Solutions from AY 2019 to AY2020.

FIGURE 3.5: SECONDARY ENROLLMENT BY GRADE LEVEL: AY16 - AY20

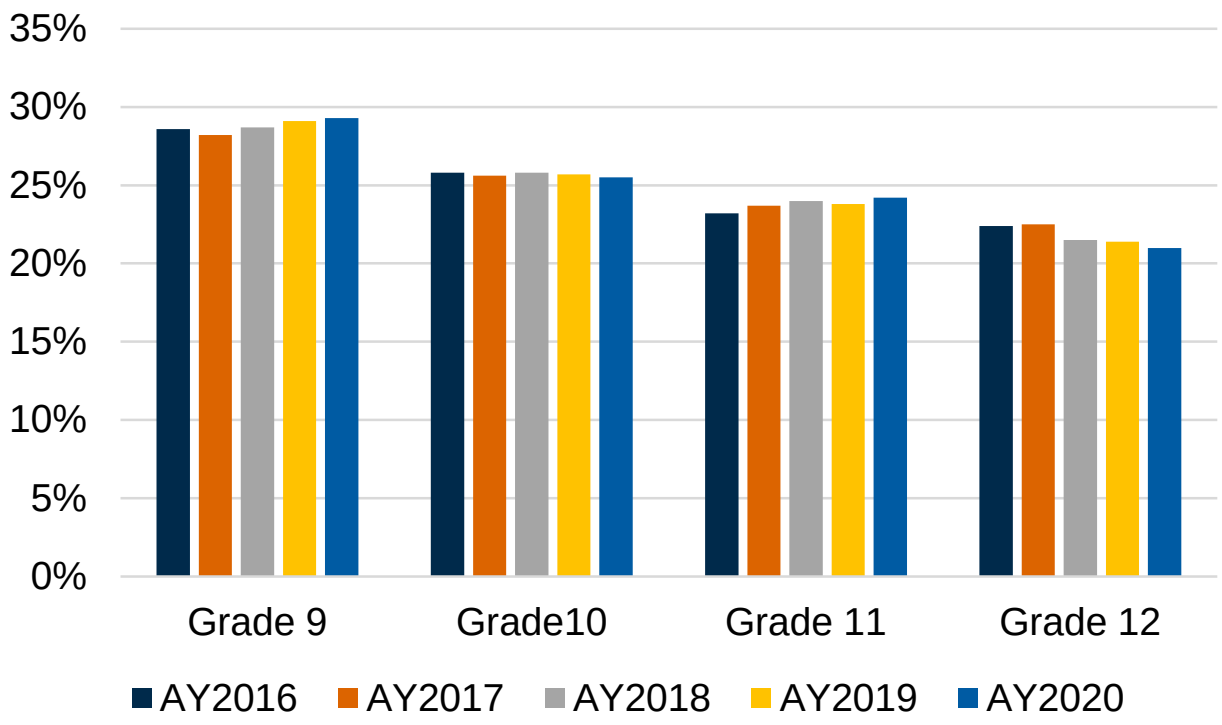
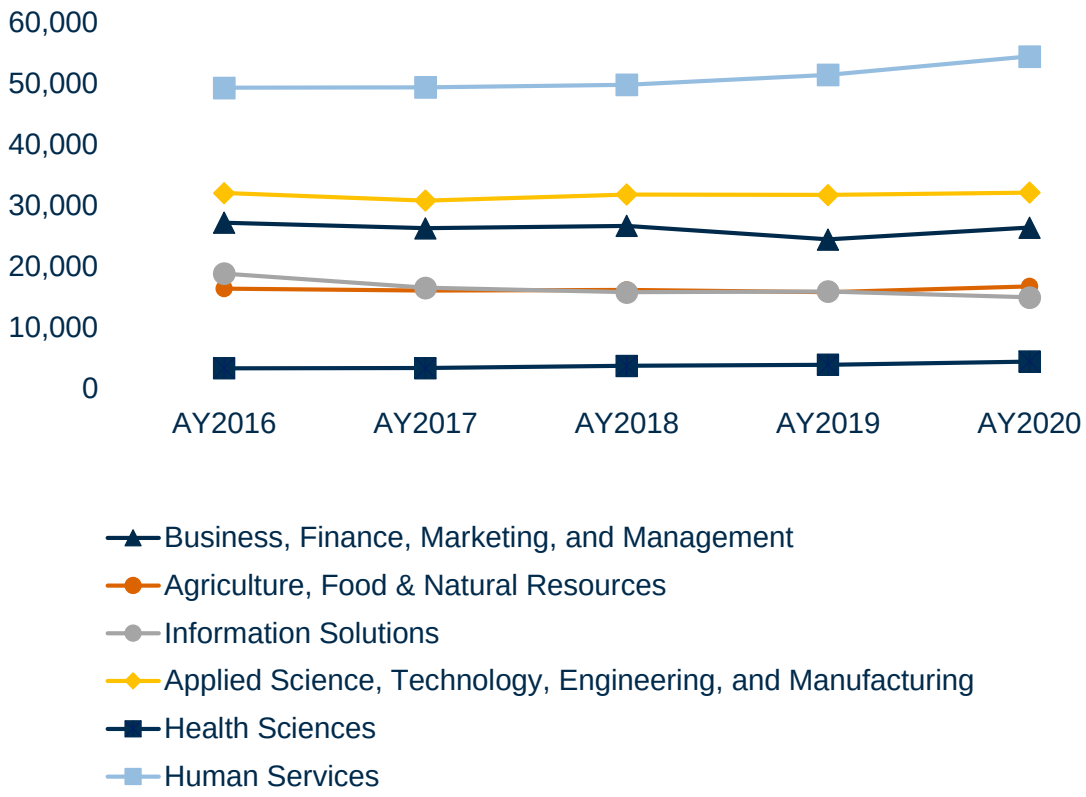


TABLE 3.3: SECONDARY CTE ENROLLMENT BY SERVICE AREA: AY16- AY20

| Service Area | AY16 | AY17 | AY18 | AY19 | AY20 | CAGR* |
|---|---|---|---|---|---|---|
| Business, Finance, Marketing and Management | 27,165 | 26,239 | 26,632 | 24,416 | 26,336 | -0.8% |
| Agriculture, Food and Natural Resources | 16,360 | 16,033 | 16,134 | 15,787 | 16,718 | 0.5% |
| Information Solutions | 18,833 | 16,475 | 15,746 | 15,894 | 14,901 | -5.7% |
| Applied Science, Technology, Engineering and Manufacturing | 32,023 | 30,787 | 31,763 | 31,692 | 32,091 | 0.1% |
| Health Sciences | 3,285 | 3,314 | 3,684 | 3,876 | 4,407 | 7.6% |
| Human Services | 49,257 | 49,340 | 49,767 | 51,395 | 54,408 | 2.5% |

*Note: Students can take CTE courses across different service areas and thus may be counted multiple times.*
** CAGR=Compound Annual Growth Rate*

FIGURE 3.6: ENROLLMENT CHANGE IN SERVICE AREAS: AY16 - AY20



## Chapter Highlights

Over a five-year period:

- Overall enrollment in secondary CTE and overall secondary CTE participation rates remained steady. Nevertheless, more recent participation in CTE courses and programs has shown an upward tick. Students in smaller school districts were participating at relatively higher rates in secondary CTE.
- There was significant growth in student participation in college credit contracted CTE courses, with college credit contracted CTE participation rates being much lower for smaller school districts. The reverse relationship is true for larger school districts.
- CTE student enrollment by grade level declines after 9th grade, with the lower enrollment seen in subsequent grades.
- In general, enrollment of students in five areas showed an upward trend compared to the year before.

## Chapter 4. Characteristics of Secondary CTE Students

Who are the students that take CTE coursework in Iowa's high schools? What are the demographics? How many are National School Lunch Program eligible? This chapter describes the characteristics of secondary CTE students and covers the distributions and demographics of secondary CTE students across grades 9-12, as well as the number of CTE courses taken over the past five academic years.

### Demographics of Secondary CTE Students

Among all secondary CTE students, white students made up 77.6 percent of the student body. Figure 4.1 displays the proportion of white students and the proportion of minority students enrolled in secondary CTE programs. The percentage of minority secondary CTE students increased steadily from 19.1 percent in AY2016 to 22.4 percent in AY2020. Hispanic students comprised the largest minority group, averaging 48.3 percent, followed first by black students, averaging 24.9 percent, and then by students who reported two or more races, averaging 14.3 percent (see Table 4.1).

FIGURE 4.1: PROPORTION OF WHITE VS MINORITY SECONDARY CTE STUDENTS: AY16- AY20

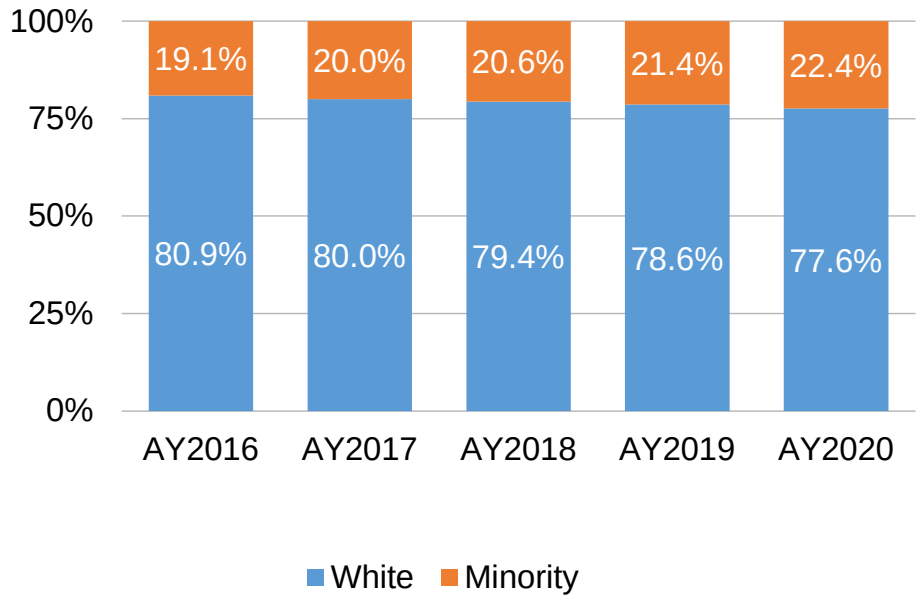
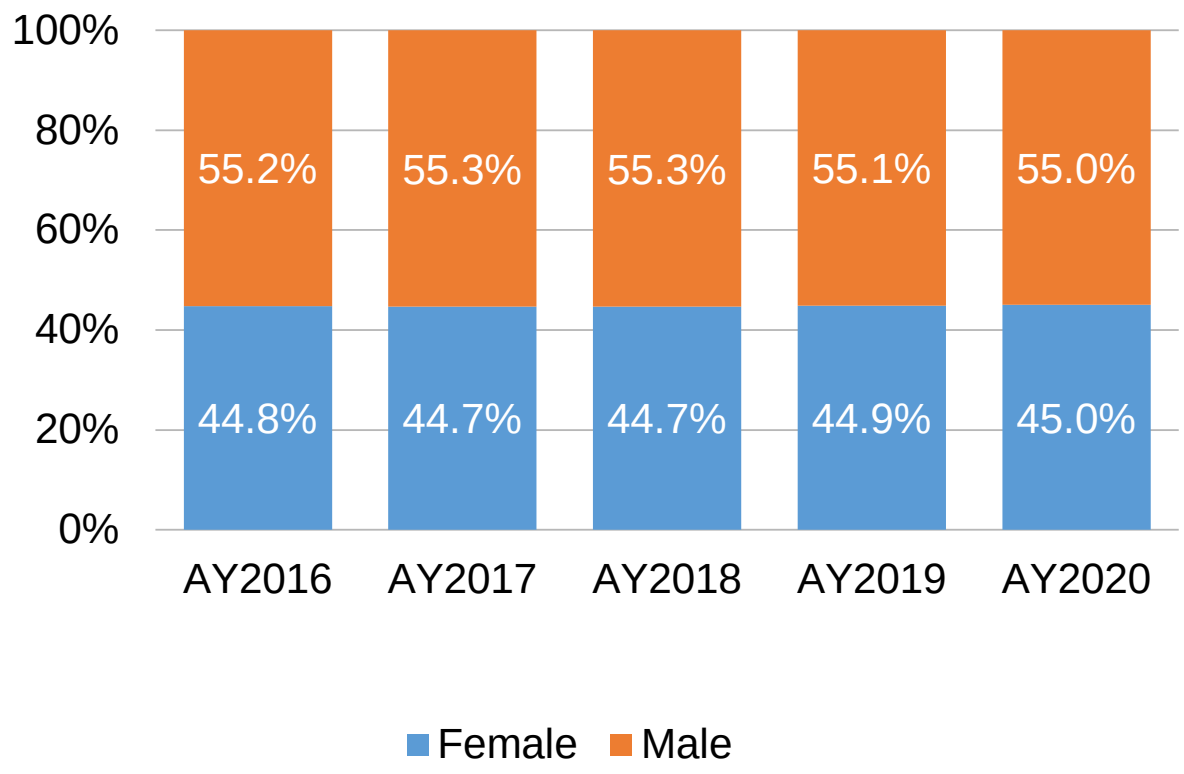


TABLE 4.1: DISTRIBUTION OF MINORITY SECONDARY CTE STUDENTS: AY16 - AY20

| Race/Ethnicity | AY16 | | AY17 | | AY18 | | AY19 | | AY20 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | N | % | N | % | N | % | N | % | N | % |
| Hispanic | 8,844 | 47.2 | 9,157 | 47.4 | 9,531 | 47.7 | 9,973 | 47.8 | 10,732 | 51.4 |
| Black | 4,638 | 24.8 | 4,818 | 24.9 | 4,836 | 24.2 | 5,045 | 24.2 | 5,490 | 26.3 |
| More than one | 2,595 | 13.9 | 2,603 | 13.5 | 2,761 | 13.8 | 3,024 | 14.5 | 3,337 | 16.0 |
| Asian | 2,146 | 11.5 | 2,193 | 11.4 | 2,306 | 11.5 | 2,274 | 10.9 | 2,317 | 11.1 |
| American Indian/Alaskan Native | 341 | 1.8 | 340 | 1.8 | 325 | 1.6 | 328 | 1.6 | 341 | 1.6 |
| Pacific Islanders | 162 | 0.9 | 201 | 1.0 | 224 | 1.1 | 232 | 1.1 | 261 | 1.3 |
| State | 18,726 | | 19,312 | | 19,983 | | 20,876 | | 22,478 | |

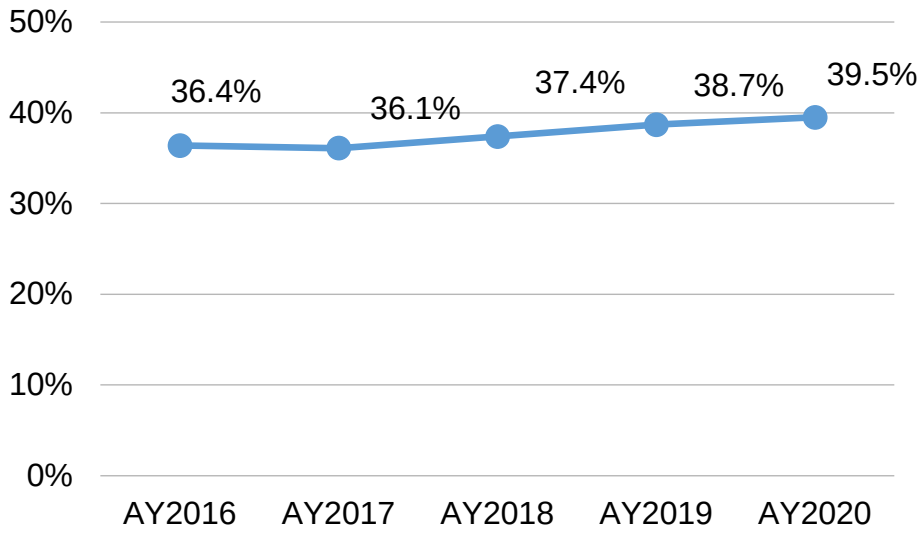
Figure 4.2 summarizes the enrollment of secondary CTE students by gender. Over the past five years, there were more male CTE students than female CTE students. The proportion of female students in secondary CTE enrollment slightly increased from 44.8 percent in AY2016 to 45.0 percent in AY2020.

FIGURE 4.2: PROPORTION OF MALE AND FEMALE SECONDARY CTE STUDENTS: AY16 - AY20



The proportion of secondary CTE students who were eligible for the National School Lunch Program is shown in Figure 4.3. The percentage of eligible students fluctuated between 36.1 percent and 39.5 percent during the past five years and peaked in AY2020.

FIGURE 4.3: PROPORTION OF SECONDARY CTE STUDENTS WHO WERE ELIGIBLE FOR FREE AND REDUCED-PRICE MEALS THROUGH THE NATIONAL SCHOOL LUNCH PROGRAM: AY16 - AY20




## Trends in CTE Courses Taken by Secondary Students

Figure 4.4 displays the distribution of CTE course taking (both secondary and college credit contracted) per student since AY2016. Between AY2016 and AY2017, approximately 44.0 percent of students who participated in the CTE program took one CTE course in an academic year. Since AY2018, this group of students has dropped to less than 35.0 percent. The proportion of students who took two CTE courses in an academic year was steady in the past five years at approximately 30.0 percent. Over 35.0 percent of students took three or more CTE courses since AY2018, compared to less than 25.0 percent between AY2016-AY2017.

The average number of CTE courses taken per student has grown by 4.5 percent (compound annual growth rate). In AY2020, on average, secondary students enrolled in 2.35 CTE courses per academic year, compared to 1.97 in AY2016 (Figure 4.5).

FIGURE 4.4: DISTRIBUTION OF SECONDARY STUDENTS BY NUMBER OF CTE COURSES: AY16- AY20

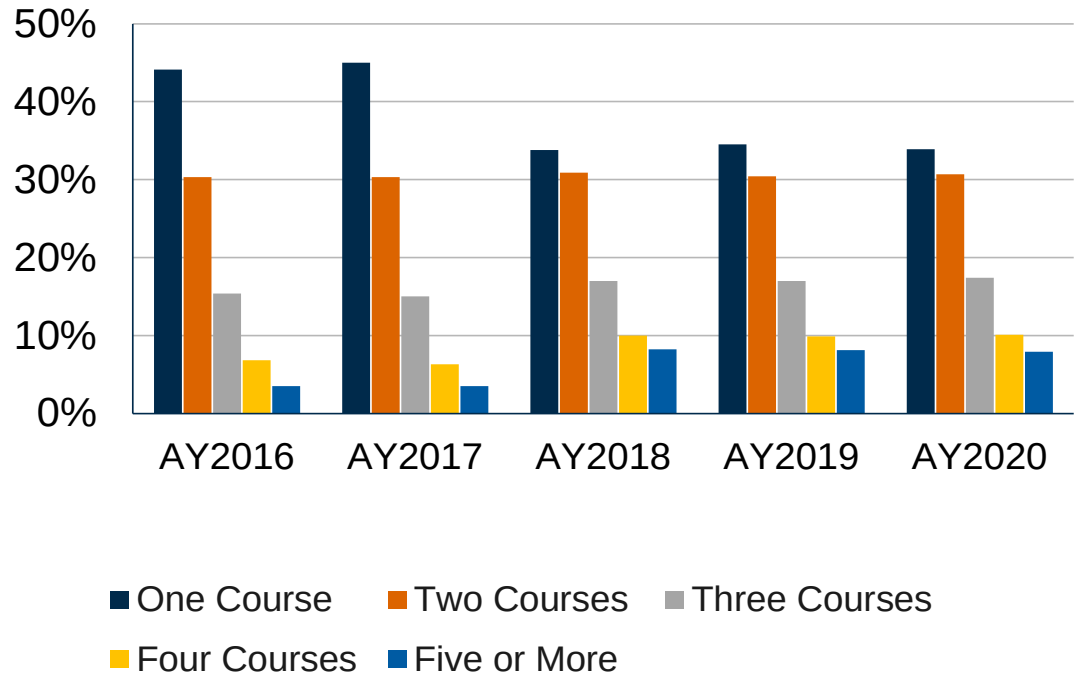
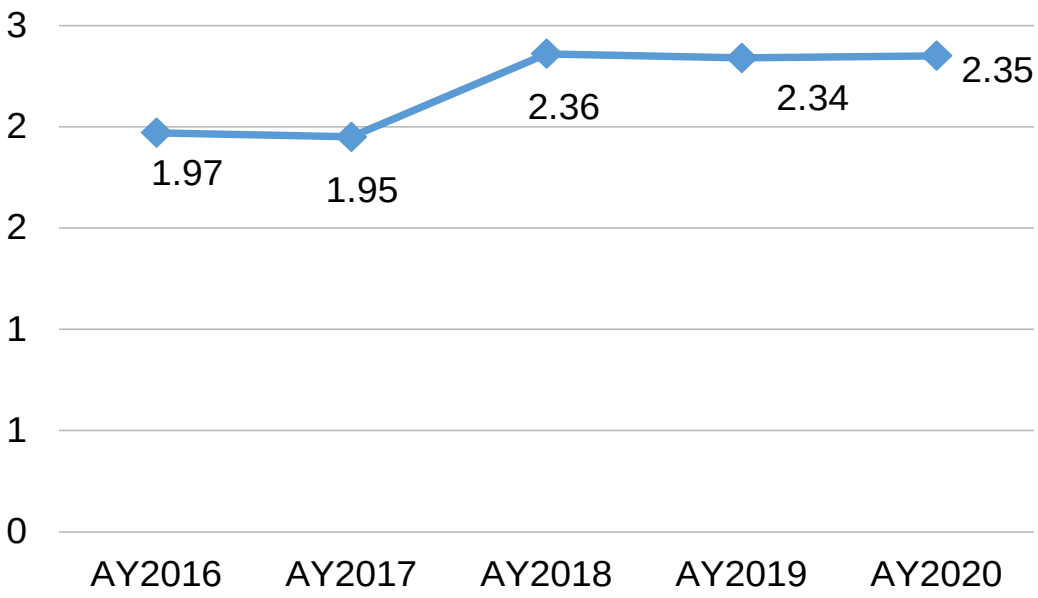



FIGURE 4.5: AVERAGE NUMBER OF CTE COURSES TAKEN BY SECONDARY STUDENTS: AY16 - AY20



On average, students in 12th grade took more CTE courses per academic year than students in other grades (Figure 4.6).

Figures 4.7 through 4.9 demonstrate the following: Male secondary students took more CTE courses than female students; white secondary students took more CTE courses than minority students and the difference between secondary CTE students who were eligible for free and reduced-price meals and those who were not eligible was not salient.

FIGURE 4.6: COMPARISON OF AVERAGE NUMBER OF CTE COURSES BY GRADE LEVEL: AY16 - AY20

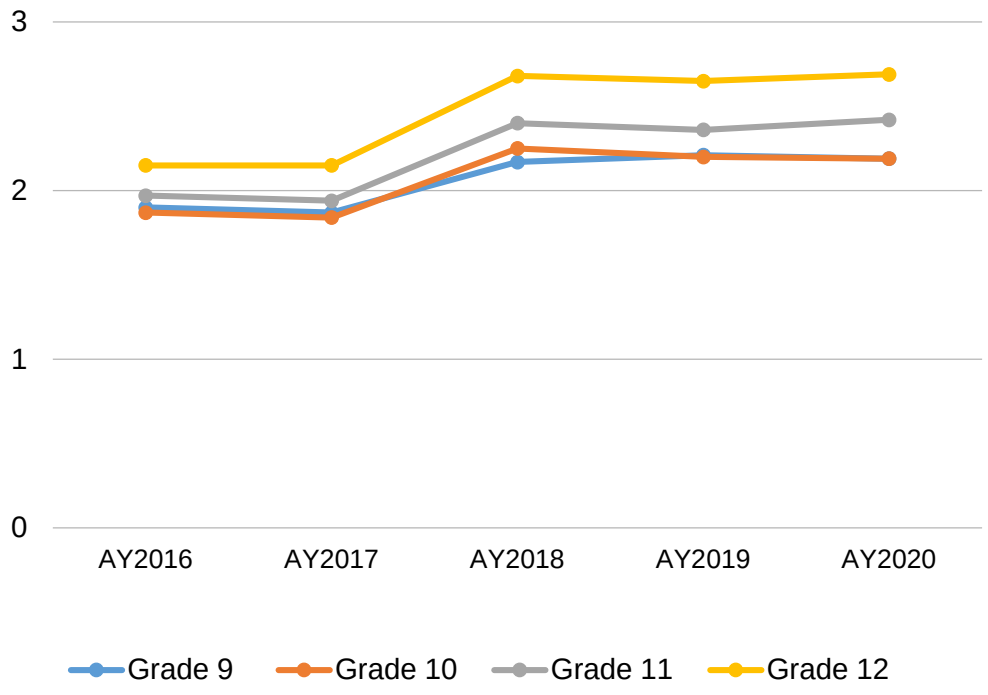



FIGURE 4.7: COMPARISON OF AVERAGE NUMBER OF CTE COURSES BY GENDER: AY16 - AY20

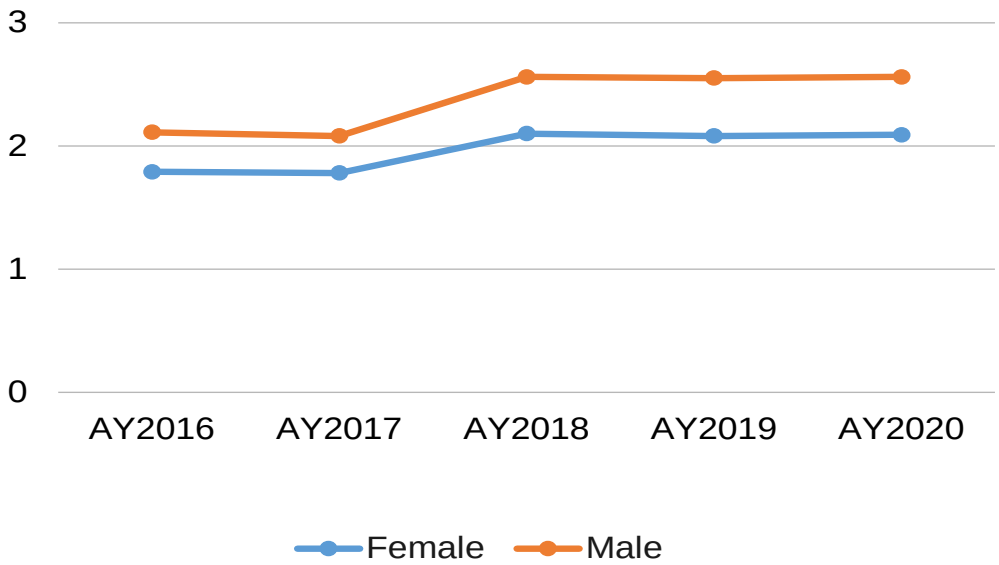


FIGURE 4.8: COMPARISON OF AVERAGE NUMBER OF CTE COURSES BY RACE/ETHNICITY: AY16 - AY20

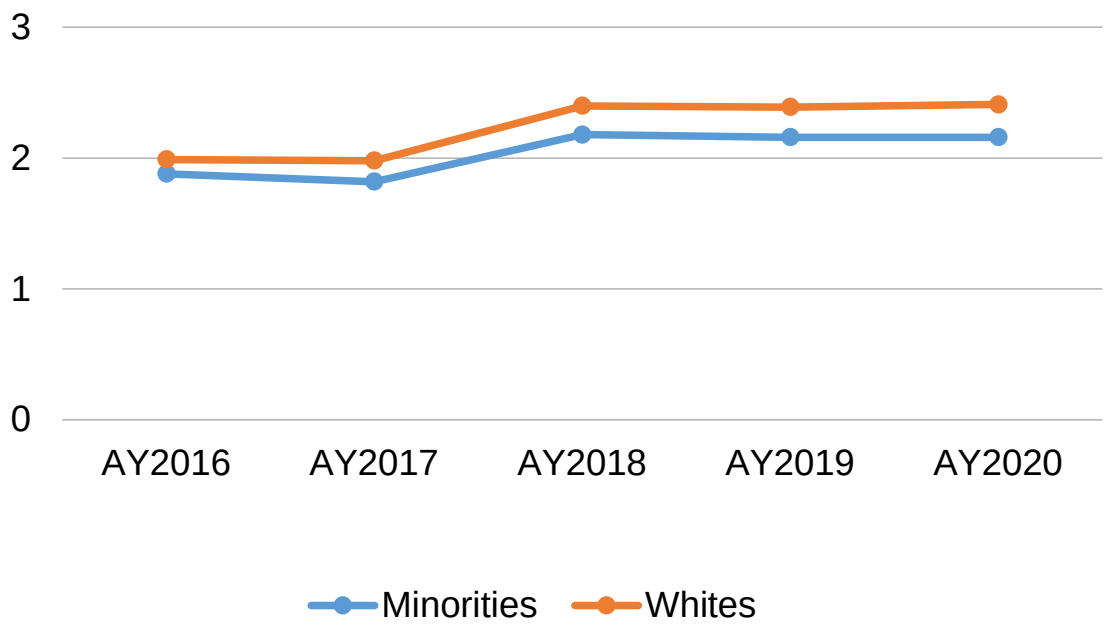
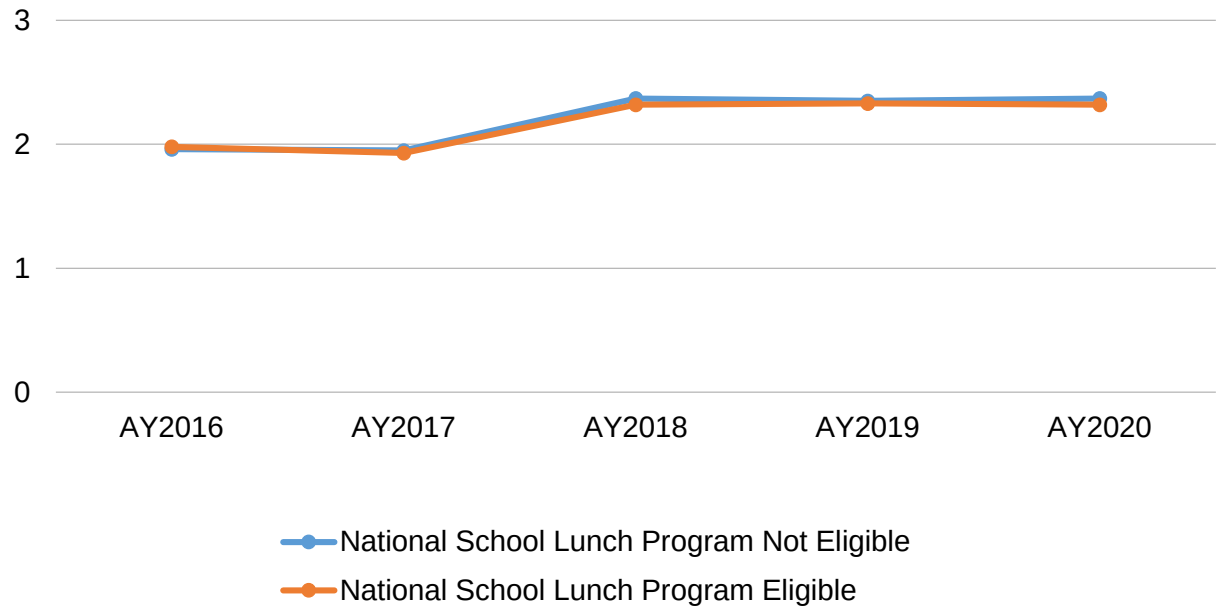



FIGURE 4.9: COMPARISON OF AVERAGE NUMBER OF CTE COURSES BY ELIGIBILITY FOR FREE AND REDUCED-PRICE MEALS THROUGH THE NATIONAL SCHOOL LUNCH PROGRAM ELIGIBILITY: AY16 - AY20



## Chapter Highlights

Over a five-year time period:

- White students show a slight decline in secondary CTE participation, while there was a slight increase for minority students.
- Hispanic and black students make up about 70.0 percent of overall minority secondary student CTE participation; CTE participation for other student population groups has held steady.
- The participation of male students has been higher than female students.
- The proportion of secondary CTE students who were eligible for the National School Lunch Program remained steady. Of note, there is a not a significant relationship between the proportion of secondary CTE students who were eligible for the National School Lunch Program and those who were not when it came to CTE course taking.
- There has been a steady rise in annual CTE course-taking across grades 9-12.
- The proportion of students taking three or more courses remained steady until AY2017; since AY2018, that proportion has increased.

## Chapter 5. Secondary CTE Human Resources

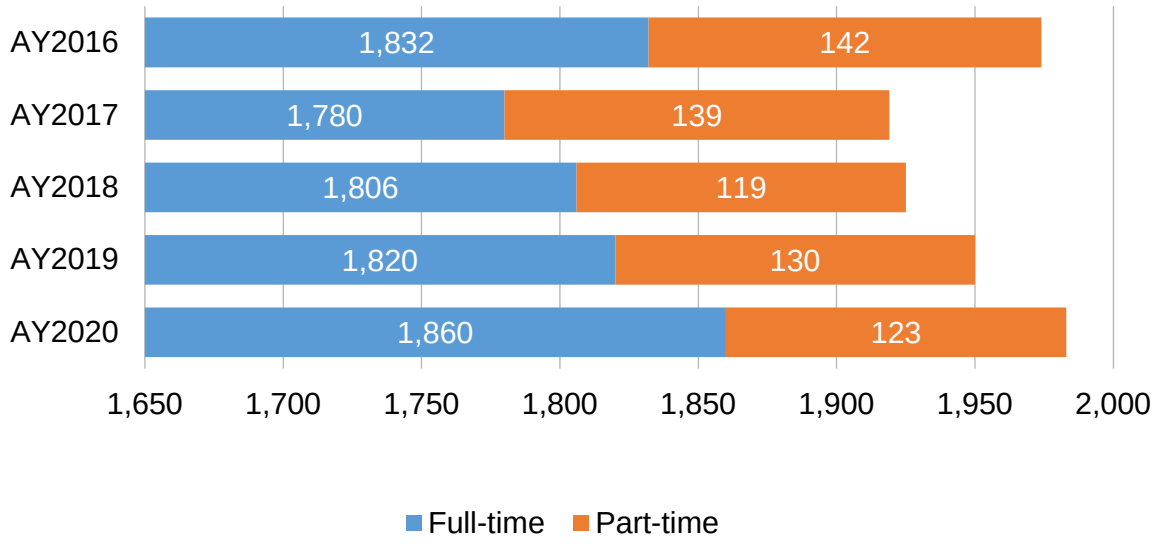
This chapter reports on secondary teachers and community college faculty responsible for teaching secondary CTE students. The first part of this chapter summarizes data available regarding secondary CTE teachers employed by school districts. Information on K–12 staff is collected from Iowa's public school districts through the Licensed Staff Detail report on the Basic Educational Data Survey (BEDS) at the beginning of each school year. For this report, the following information on CTE teachers for grades 9-12 from AY2016 to AY2020 was extracted from BEDS: race/ethnicity, gender, age, years of experience, base salaries and type of employment. This data was also matched with the data from the Iowa Board of Educational Examiners to cross-reference teaching endorsements. Both full-time and part-time secondary CTE teachers are reported.

The second part of this chapter reports information on CTE faculty employed by Iowa's community colleges who teach college credit contracted CTE courses for high school students. The Community College Management Information System (MIS) was used to report on this data. Community college faculty who had at least one high school student in their college credit CTE courses in an academic year are identified as college credit contracted CTE teachers in this report. These instructors may be full-time, adjunct or part-time. For differentiating purposes, faculty employed by school districts are referred to as secondary CTE teachers, and faculty employed by community colleges are referred to as college credit contracted CTE faculty in this chapter.

### Secondary CTE Teachers

Figure 5.1 displays the number of full-time and part-time CTE teachers employed by school districts since AY2016. The number of CTE teachers has grown by less than one percent (compound annual growth) from 1,974 in AY2016 to 1,983 in AY2020. The number of full-time CTE teachers increased from 1,832 to 1,860, a 0.4 percent compound annual growth. The number of part-time CTE teachers decreased from 142 in AY2016 to 123 in AY2020, a 3.5 percent compound annual decrease.

FIGURE 5.1: NUMBER OF SECONDARY CTE TEACHERS BY EMPLOYMENT TYPE: AY16 - AY20



In terms of gender, there were more male CTE teachers than female (Figure 5.2); however, since AY2018, female teachers have outnumbered male. The number of female CTE teachers increased by 0.8 percent (compound annual change) from AY2016 to AY2020, while the number of male CTE teachers dropped 0.6 percent (compound annual change). As to race/ethnicity, the proportion of white and minority teachers stayed about the same, with minorities accounting for around two percent of the CTE teacher population (Table 5.1). There is little variation regarding the average age, average district experience and average total experience among secondary CTE teachers during the past five years (Table 5.2). The average base salary of CTE teachers (including part-time teachers) has increased by 1.5 percent (compound annual growth) from $52,724 in AY2016 to $55,925 in AY2020.

FIGURE 5.2: NUMBER OF SECONDARY CTE TEACHERS BY GENDER: AY16 - AY20

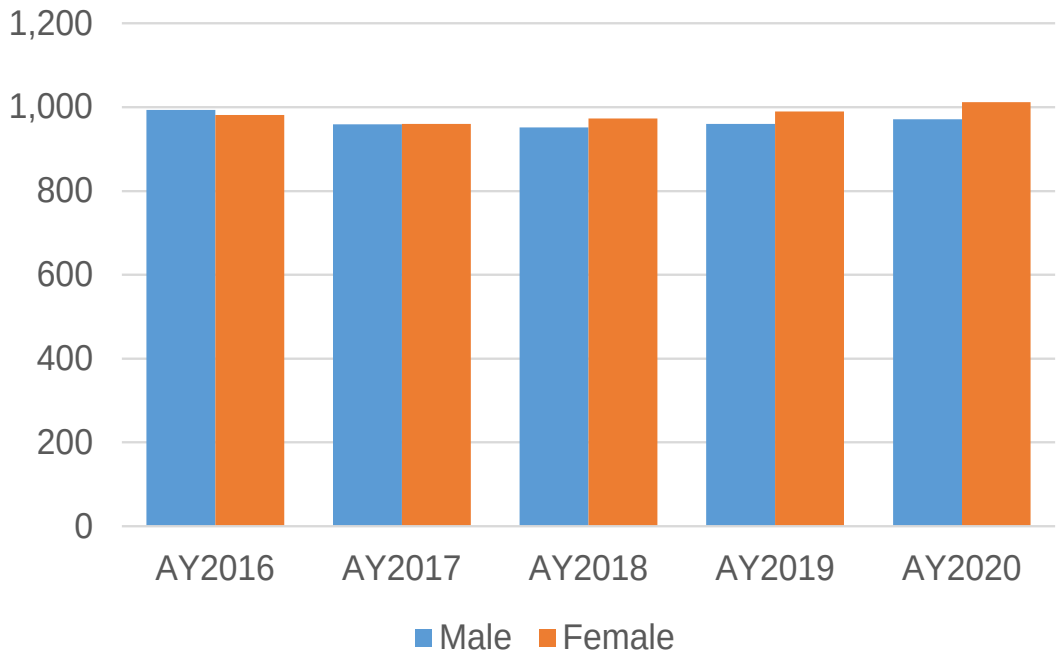



TABLE 5.1: SECONDARY CTE TEACHERS BY RACE/ETHNICITY: AY16- AY20

| Race/Ethnicity | AY16 | AY17 | AY18 | AY19 | AY20 |
|---|---|---|---|---|---|
| | % | % | % | % | % |
| Asian | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 |
| Black | 0.7 | 0.6 | 0.7 | 0.7 | 0.7 |
| Hispanic | 0.2 | 0.3 | 0.4 | 0.8 | 0.9 |
| More than one | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 |
| American Indian/Alaskan Native | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| White | 98.7 | 98.9 | 98.5 | 98.1 | 97.9 |
| Total | 100 | 100 | 100 | 100 | 100 |

TABLE 5.2: AGE, BASE SALARY, TOTAL EXPERIENCE, AND DISTRICT EXPERIENCE OF SECONDARY CTE TEACHERS: AY16-AY20

| Year | Age (Years) | Base Salary | Total Experience (Years) | District Experience (Years) |
|---|---|---|---|---|
| AY16 | 43.4 | $52,724 | 14.7 | 10.5 |
| AY17 | 43.2 | $54,229 | 14.7 | 10.5 |
| AY18 | 43.1 | $54,872 | 14.6 | 10.5 |
| AY19 | 43.0 | $55,163 | 14.2 | 10.2 |
| AY20 | 42.8 | $55,925 | 14.1 | 10.3 |

## Secondary CTE Teachers in the Six Service Areas

High school teachers are required to obtain relevant CTE endorsements (certificates) or authorizations to teach secondary CTE courses. Each teacher can obtain multiple certificates. For reporting purposes, secondary CTE endorsements are categorized based on six service areas. Teachers with 5-12 Multi-occupations, Work Experience Coordinator, PS Multi-Occupation Preparatory or Vocational (9-12) endorsements can teach secondary courses applicable to all service areas (noted in Figure 5.3 as Applicable to All Service Areas).

As shown in Figure 5.3, in AY2020, teachers with endorsements in Business, Finance, Marketing and Management (1,137) was the largest group, followed by Human Services (681); Agriculture, Food, and Natural Resources (500); Health Science (250) and Applied Science Technology, Engineering and Manufacturing (216).

FIGURE 5.3: NUMBER OF SECONDARY CTE TEACHERS BY ENDORSEMENT TYPE: AY20

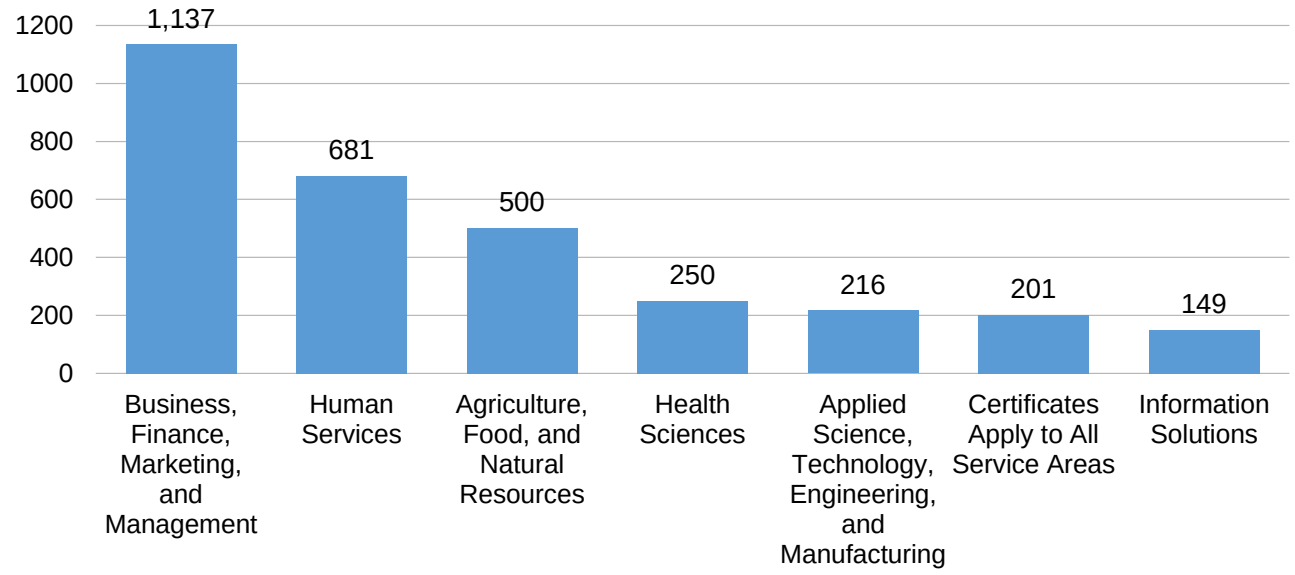
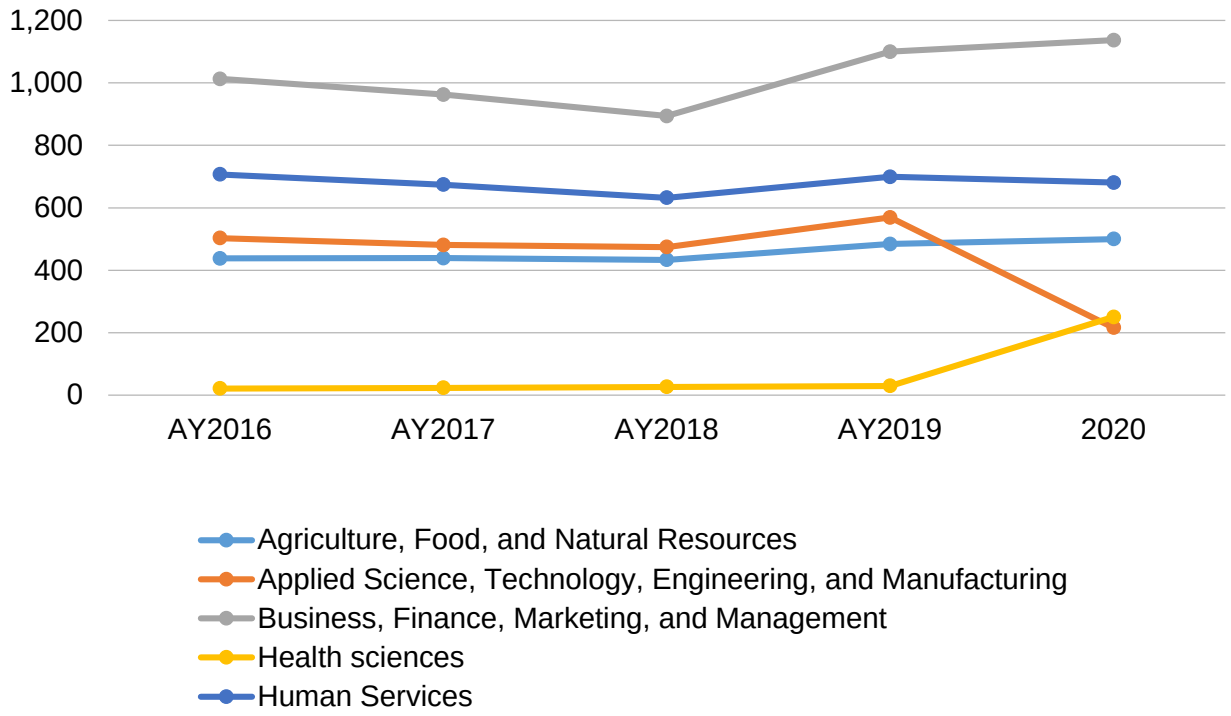


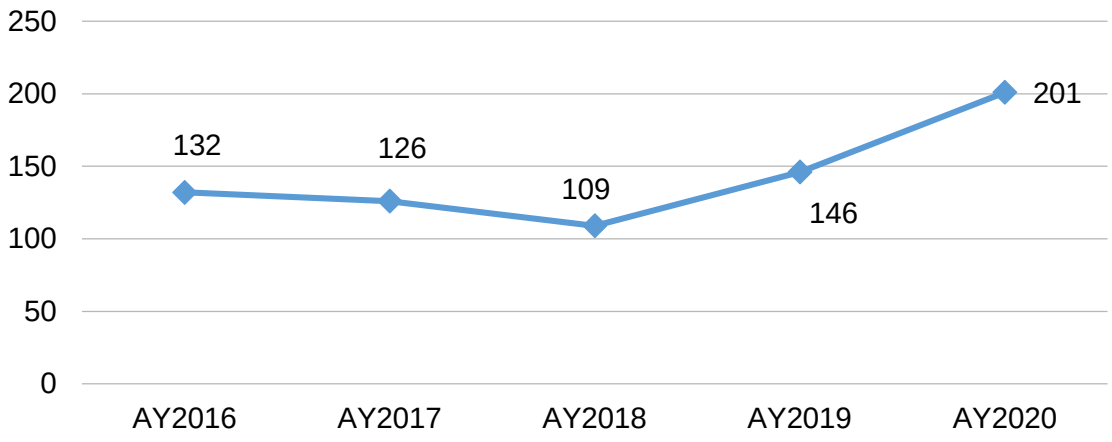
Figure 5.4 demonstrates the change in the number of endorsements in different service areas over the past five years. It seems that the number of CTE endorsements has increased in all service areas in AY2020 except for Applied Science, Technology, Engineering and Manufacturing, and Human Services. In terms of compound annual growth rate, the number of teachers with an endorsement in Health Science, Information Solutions and Agriculture, Food and Natural Resources have increased by 85.8 percent, 53.3 percent and 3.4 percent, respectively. Figure 5.5 displays the change of the number of teachers with endorsements applicable to all service areas. It appears that this group has decreased in AY2017 and AY2018, but increased in AY2019 and AY2020.

FIGURE 5.4: NUMBER OF TEACHERS WITH CTE ENDORSEMENTS BY SERVICE AREA: AY16-AY20




*Note: Historical information is not available for Information Solutions since it was a new endorsement for K-12 teachers in AY18.*

FIGURE 5.5: NUMBER OF TEACHERS WITH AN ENDORSEMENT APPLICABLE TO ALL SERVICE AREAS: AY16-AY20



## Faculty Characteristics

Figure 5.6 displays the number of full-time, adjunct and part-time CTE faculty employed by community colleges and teaching college credit contracted CTE courses since AY2016. The number of community college CTE faculty teaching high school students decreased by 1.4 percent (annualized) from 2,094 in AY2016 to 1,976 in AY2020. Unlike secondary CTE teachers employed by school districts who were mainly full-time employees, approximately 70.0 percent of community college CTE faculty teaching high school students were adjunct or part-time. The proportion of full-time, community college CTE faculty was less than one third, and the number of full-time CTE faculty decreased by 3.3 percent (annualized) from 699 in AY2016 to 611 in AY2020.

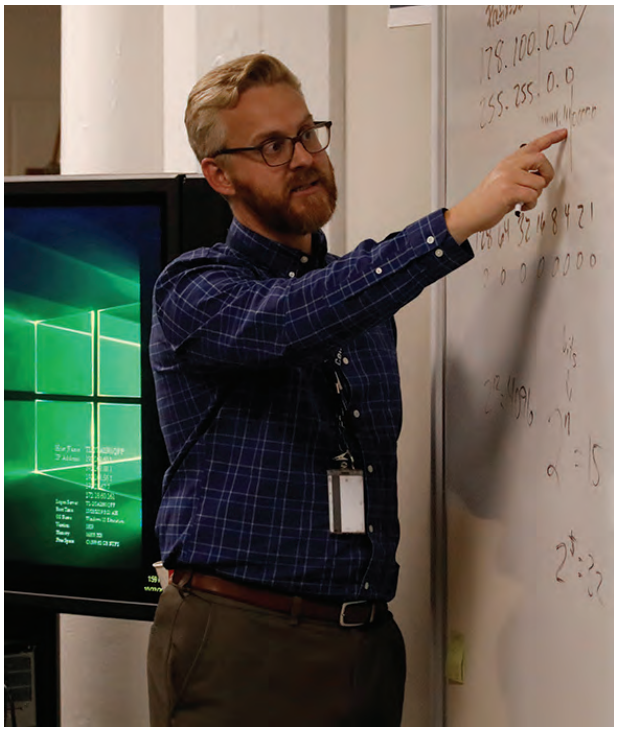
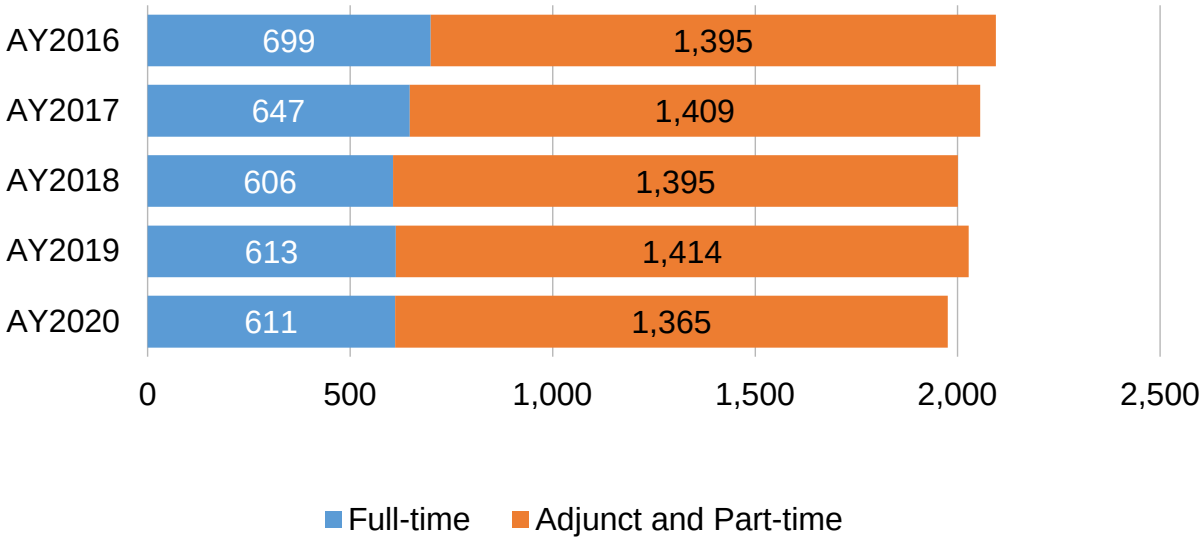


FIGURE 5.6: NUMBER OF COLLEGE-CREDIT CONTRACTED CTE FACULTY BY EMPLOYMENT TYPE: AY16-AY20



In terms of gender, female faculty have outnumbered males (Figure 5.7). The number of female community college CTE faculty teaching high school students increased from AY2016 to AY2020 with compound annual growth rates of 0.2 percent, whereas the number of male community college CTE faculty decreased by 0.3 percent. While 2.0 percent did not report their race/ethnicity, white faculty were the largest group teaching college credit contracted CTE courses (see Table 5.3). There is little variation regarding age, averaging 49 years old, of community college CTE faculty teaching high school students. The average salary of these CTE faculty (including part-time instructors) decreased with a compound annual rate of 0.6 percent from $29,834 in AY2016 to $29,091 in AY2020.

FIGURE 5.7: NUMBER OF COLLEGE-CREDIT CONTRACTED CTE FAULTY BY GENDER: AY16- AY20

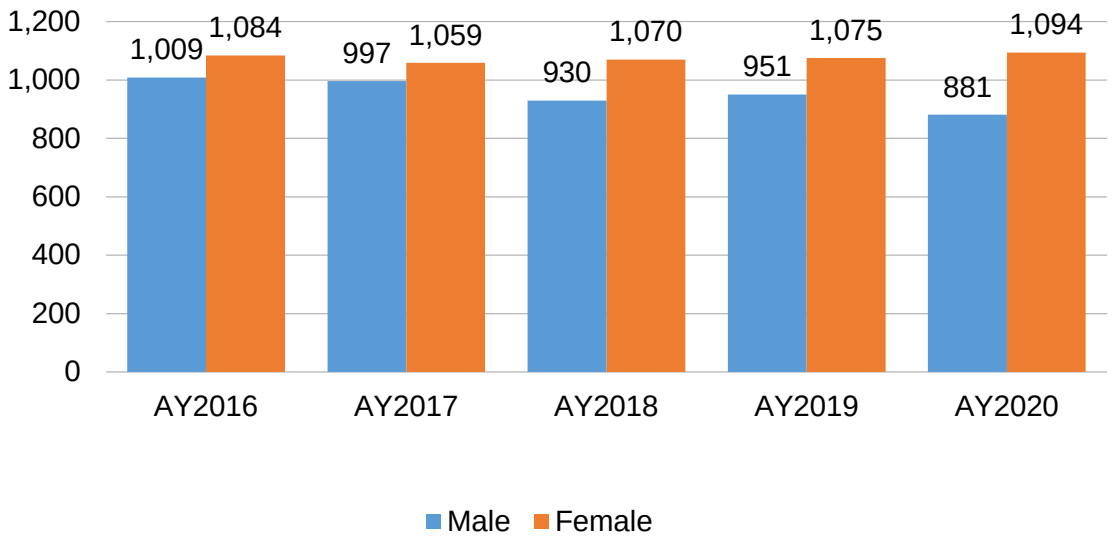



TABLE 5.3: COLLEGE-CREDIT CONTRACTED CTE FACULTY BY RACE/ETHNICITY: AY16-AY20

| Race/Ethnicity | AY16 | AY17 | AY18 | AY19 | AY20 |
|---|---|---|---|---|---|
| | % | % | % | % | % |
| Asian | 1.8 | 2.0 | 1.5 | 1.7 | 1.8 |
| Black | 2.0 | 2.0 | 1.7 | 1.6 | 2.4 |
| Hispanic | 1.2 | 1.4 | 1.4 | 1.6 | 2.0 |
| More than one | 0.5 | 0.9 | 0.8 | 0.7 | 0.8 |
| American Indian/ Alaskan Native | 0.3 | 0.4 | 0.2 | 0.3 | 0.3 |
| White | 94.2 | 93.3 | 94.0 | 94.1 | 92.8 |
| Total | 100 | 100 | 100 | 100 | 100 |

## College Credit Contracted CTE Faculty in the Six Service Areas

Figure 5.8 displays the unduplicated count of community college CTE instructors teaching high school students by service area. Community college faculty who taught courses in more than one service area are categorized under the heading “More than One,” which was the largest community college faculty group teaching secondary students (863 instructors) in AY2020. The second largest community college CTE faculty group teaching high school students was Health Science (377), followed by Human Services (301). In contrast, only 58 CTE faculty taught courses solely in Agriculture, Food and Natural Resources, indicating the school districts relied more heavily on the community colleges for CTE instruction in other service areas.

Figure 5.9 demonstrates the change in the number of community college CTE faculty teaching secondary students in the six service areas over the past five years. Regarding compound annual change, the number of faculty only increased in Health Science, which rose 7.5 percent. The number of faculty in Information Solutions experienced the biggest decrease by 7.7 percent, followed by Business, Finance, Marketing and Management and Applied Science, Technology, Engineering and Manufacturing, both at 4.8 percent. As to the number of faculty teaching high school students in multiple service areas, this decreased by 2.0 percent.

FIGURE 5.8: COLLEGE-CREDIT CONTRACTED CTE FACULTY BY SERVICE AREA IN AY20

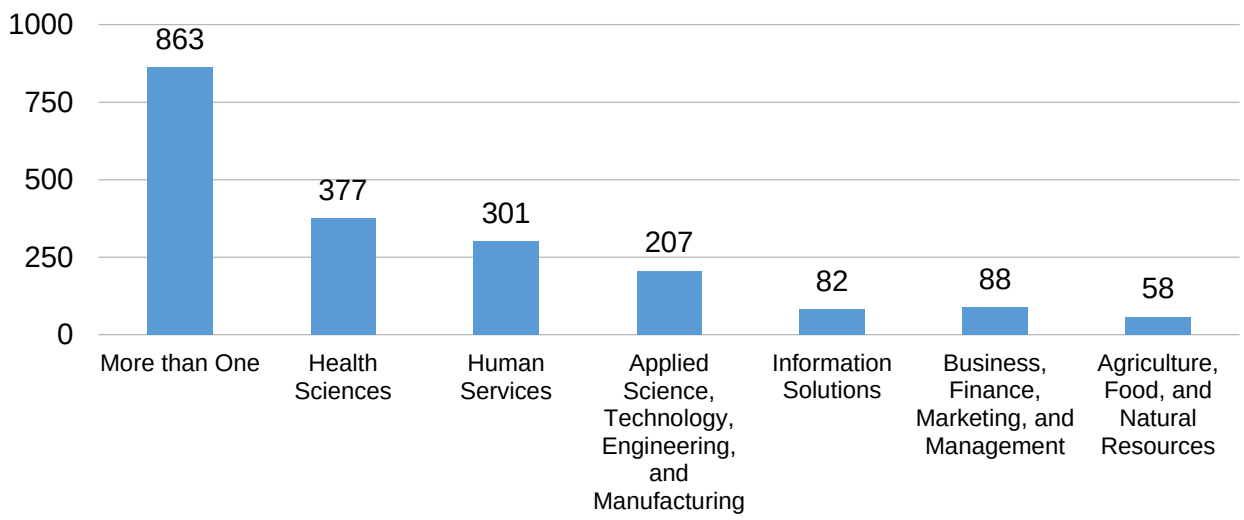


FIGURE 5.9: NUMBER OF COLLEGE-CREDIT CONTRACTED CTE FACULTY BY SERVICE AREA: AY16-AY20

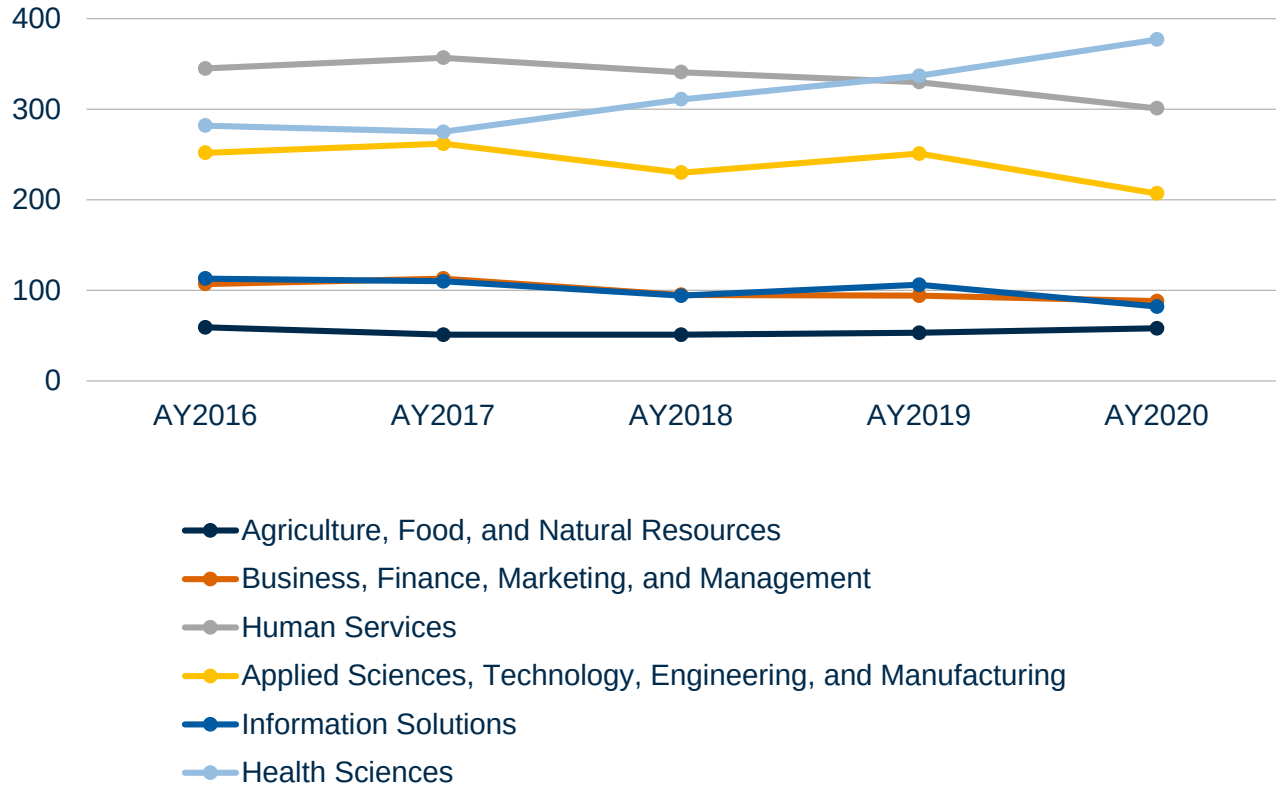
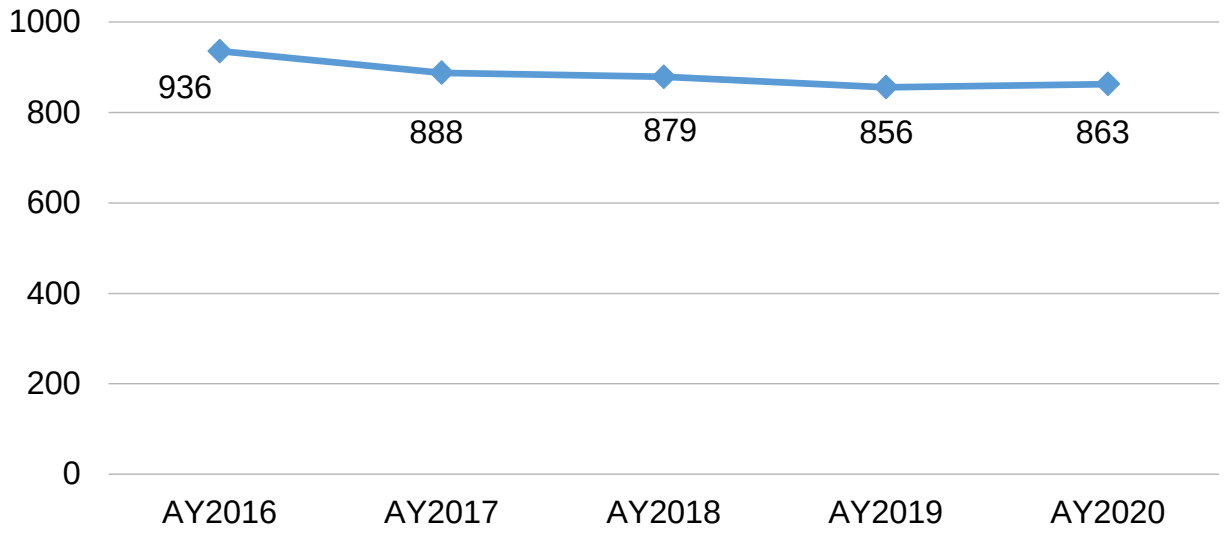



FIGURE 5.10: NUMBER OF COLLEGE-CREDIT CONTRACTED CTE FACULTY IN MORE THAN ONE SERVICE AREA: AY16 - AY20



## Chapter Highlights

Over a five-year time period:

- Secondary CTE teacher characteristics have not changed significantly. The secondary CTE teacher is for the most part white and close to 43 years old.
- The service areas in which secondary CTE teachers have received the most CTE endorsements are more aligned to those service areas that were in place prior to the reconfiguration as a result of HF2392. As HF2392 reaches full implementation, there should be realignment as secondary CTE teachers focus more on the newer service areas or get endorsements in multiple areas.
- Secondary CTE teachers have experienced salary increases, but in real terms there has been very little change in salaries.
- Community college CTE faculty teaching high school students are female, white, working as part-time or adjunct faculty and are close to 50 years old.

## Section II: Four Emerging Areas of Focus

## Implementing High-Quality Career and Technical Education

## Chapter 6. Career and Technical Student Organizations

Career and technical student organizations (CTSOs) enhance career and leadership development of secondary and postsecondary students through contextual instruction, applied learning and real-world application. CTSOs are not "clubs", but rather an integral component of the classroom curriculum and instruction. CTSOs are referred to as co-curricular activities, in which students are engaged in hands-on demonstrations and real life and work experiences related to individual career interests. The national CTSO website (CTSOs.org) states the following: *"As student organizations, CTSOs guide students in developing a career path, (and) a program of study, and provide opportunities in gaining the skills and abilities needed to be successful in those careers through classroom/ laboratory instructions, competitive events and other student organization activities. CTSOs also offer students opportunities to hold leadership positions at the local, state and national level and organize leadership development conferences in which students can network with other students as well as business and industry partners."*

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### CTSOs in Iowa

Table 6.1 describes the participant outcomes, CTE program focus and academic year 2019-2020 membership for the secondary CTSOs supported by the Iowa Department of Education by providing limited financial support through Carl D. Perkins funding. The Department holds the state charter for each CTSO established within the state and provides technical assistance to CTSOs as needed. Active secondary CTSOs in Iowa include:

- Business Professionals of America (BPA)
- DECA
- Family, Career, and Community Leaders of America (FCCLA)
- Future Business Leaders of America/Phi Beta Lambda (FBLA-PBL)
- National FFA Organization
- HOSA – Future Health Professionals
- SkillsUSA
- Technology Students Association (TSA)

Students participating in CTSOs are provided opportunities to develop and enhance their leadership and citizenship skills within the context of career and program interests while enhancing their occupational skills and future employability. These organizations provide students opportunities in a caring, secure environment to participate in leadership initiatives and to enhance their awareness of the role of community service and responsibility to governmental affairs.

As Table 6.1 describes in the participant outcomes column, activities are designed to provide opportunities for student achievement in sound decision-making, positive professional appearances and skill attainment. These experiences are enhanced through the involvement of business, industry and labor in a climate of positive interaction and cooperation. For many CTE students, this is the only leadership opportunity they will experience during their educational careers. Communities, states and the nation benefit, as well as the individual and their families.

TABLE 6.1: MEMBERSHIP FOR EACH CTSO AT THE SECONDARY LEVEL IN AY2020

| Student Organization | Participant Outcomes | CTE Programs | AY19-20 Membership |
|---|---|---|---|
| | **National FFA Organization (FFA)** develops students' leadership, promote personal growth and career success, and encourage excellence in scholarship through agricultural education programs and services. | Agriculture, Food, and Natural Resources | 16,077 |
| | **Technology Student Association (TSA)** aims to enhance personal development, leadership, and career opportunities in STEM through intra-curricular activities, competitions, and related programs. | Manufacturing Science, Technology, Engineering, and Mathematics | 5,451 |
| | **Family, Career and Community Leaders of America (FCCLA)** promotes personal growth and leadership development through family and consumer sciences education. Members develop skills for life through character development, creative and critical thinking, interpersonal communication, practical knowledge, and career preparation. | Education and Training<br>Hospitality and Tourism<br>Human Services | 1,987 |
| | **Future Business Leaders of America - Phi Beta Lambda (FBLA-PBL)** inspires and prepares students to become community-minded business leaders in a global society through relevant career preparation and leadership experiences. | Business, Management and Administration<br>Finance Information Technology | 1,330 |
| | **DECA** prepares emerging leaders and entrepreneurs in marketing, finance, hospitality and management in high schools and colleges around the world. | Hospitality and Tourism<br>Marketing | 504 |
| | **Business Professionals of America (BPA)** contributes to the preparation of global professionals through the advancement of leadership, citizenship, academic, and technological skills. | Business, Management and Administration<br>Finance<br>Information Technology | 630 |
| | **HOSA – Future Health Professionals** promotes career opportunities in the health care industry and enhances the delivery of quality health care to all people. | Health Science | 343 |
| | **SkillsUSA** empowers its members to become world-class workers, leaders, and responsible American citizens. It improves the quality of our nation's future skilled workforce through personal, workplace, and technical skills grounded in academics. | Architecture/Construction<br>Arts, AV/Technology and Communications, Human Services, Law, Public Safety, Corrections and Security, Transportation, Distribution and Logistics | 421 |

## CTSO Membership in Iowa

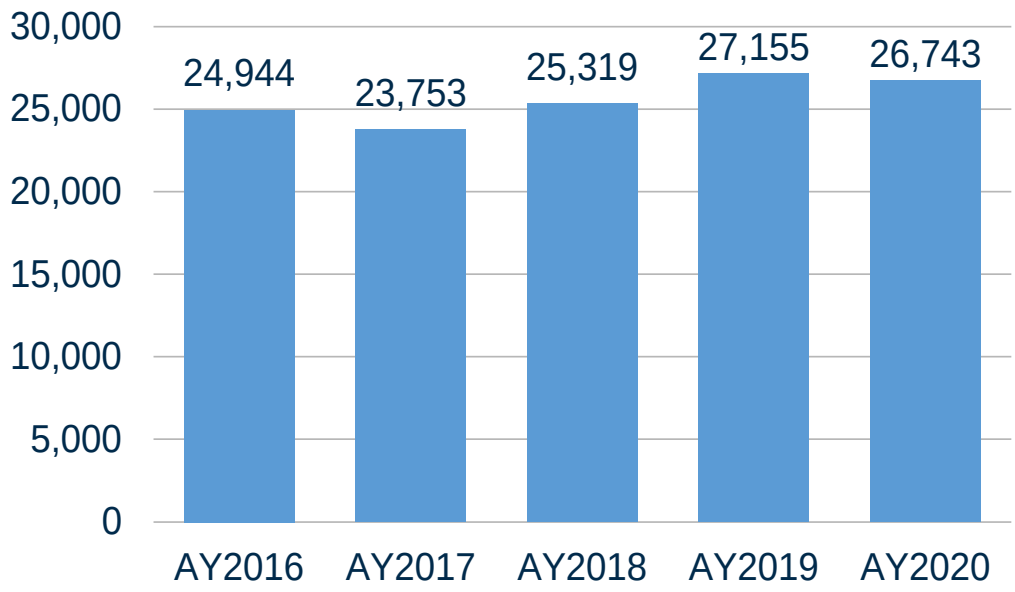
CTSOs in Iowa currently serve just under 27,000 students at the secondary levels. Figure 6.1 displays the total number of CTSO memberships for the last five academic years. The total number of CTSO memberships decreased slightly by 412 (1.5 percent) during the AY2019 to AY2020 period.

From AY2016 to AY2020, FFA had the largest increase in membership: a total of 2,261 additional student members. During the same period, SkillsUSA saw a 69.8 percent increase in membership, the largest of all CTSOs in Iowa in terms of percentage. BPA decreased in membership by 73 members, or 10.4 percent, from AY2016 to AY2020.

FIGURE 6.1: SECONDARY CTSO MEMBERSHIP IN IOWA: AY16 - AY20

| | BPA | DECA | FBLA-PBL | FCCLA | FFA | HOSA | SkillsUSA | TSA | Total |
|---|---|---|---|---|---|---|---|---|---|
| AY2016 | 703 | 535 | 1,247 | 1,739 | 14,346 | 273 | 248 | 5,853 | 24,944 |
| AY2017 | 502 | 761 | 1,293 | 1,577 | 14,754 | 378 | 221 | 4,267 | 23,753 |
| AY2018 | 528 | 745 | 1,337 | 1,579 | 15,462 | 240 | 248 | 5,180 | 25,319 |
| AY2019 | 546 | 606 | 1,349 | 2,825 | 15,512 | 228 | 213 | 5,876 | 27,155 |
| AY2020 | 630 | 504 | 1,330 | 1,987 | 16,607 | 343 | 421 | 5,451 | 26,743 |

FIGURE 6.2: SECONDARY CTSO MEMBERSHIP IN IOWA: AY16- AY20



## Chapter Highlights

Over a five-year time period:

- Secondary CTSO membership experienced a slight decline in members in AY2020.
- Membership has steadily increased, reaching a record high of 27,155 in AY2019, with only a small decline attributed to COVID-19 in AY2020. SkillsUSA and FFA had record high memberships in AY2020.
- All CTSOs except DECA are continuing a growth trend, with AY2020 being an outlier due to limited and canceled spring programming.

## Chapter 7. Secondary Career and Academic Planning

### Career and Academic Planning

In 2016, HF2392, Division I redesigned the career and academic planning process. The CTE redesign moved from the traditional career planning assessments and inventories to integrating high quality, high-value, career-related experiences designed to increase student engagement and align students' interests with local, regional and state labor market needs.

Six years into the redesign, the career and academic planning process continues to seek student, parent, district and external stakeholder engagement to ensure information remains relevant and useful. The holistic nature ensures continuous feedback between internal and external stakeholders and ensures that students exhibit highly marketable employability skills and are prepared to successfully transition into higher education, training programs or directly into the workforce.

Iowa's career planning vision focuses on graduating students who are career and college ready with the academic, technical and employability skills to meet employer needs. In 2020, Iowa's 330 school districts implemented the career and academic planning process to over 185,000 students in grades 8–12. The graphic below describes Iowa's career planning vision and the redesigned career and academic planning process.

### The District Team

Each school district in Iowa should have an established District Team that has developed a written career guidance plan and reviews that plan annually. The teams typically include, but are not limited to, a school administrator, a school counselor, teachers, including career and technical education teachers, special education educators and individuals responsible for coordinating work-based learning activities. The team ensures that the district is using an approved career information system (CIS) and helps to determine what ICAP activities will be completed in each grade level to achieve the requirements of rule 281—49.3(279).

### The District Plan

The district plan serves as a road map and provides context for high-quality career programming in grades 8 – 12. The plan is a dynamic document that describes who is expected to do what, when and how.

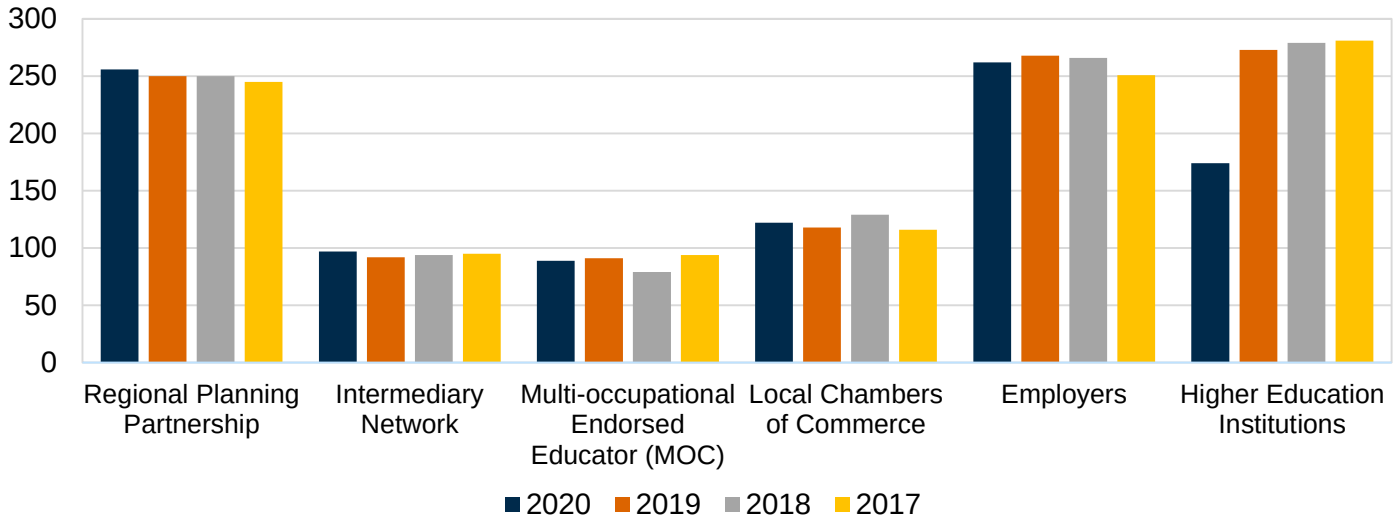
As school districts continue to implement Division I of HF 2392, it is crucial to create partnerships that allow students to have a holistic and authentic career learning experience. Districts are encouraged to work to build and maintain strong relationships with external partners to increase high-quality career planning exposure to students.

In AY2020*, three hundred and four (N-304**) school districts career planning outcomes included collaboration with internal and external stakeholders to write the district plan. Stakeholder engagement continues to be a priority for school districts across the state and all are working a variety of entities to increase relationships with business and industry.

**During AY2020 schools were not required to complete all ICAP requirements due to the COVID-19 Pandemic.*

***Iowa has 327 school districts; 23 of which whole grade share with other districts who reported career planning outcomes for 2020.*

FIGURE 7.1: EXTERNAL STAKEHOLDER ENGAGEMENT: AY17- AY20



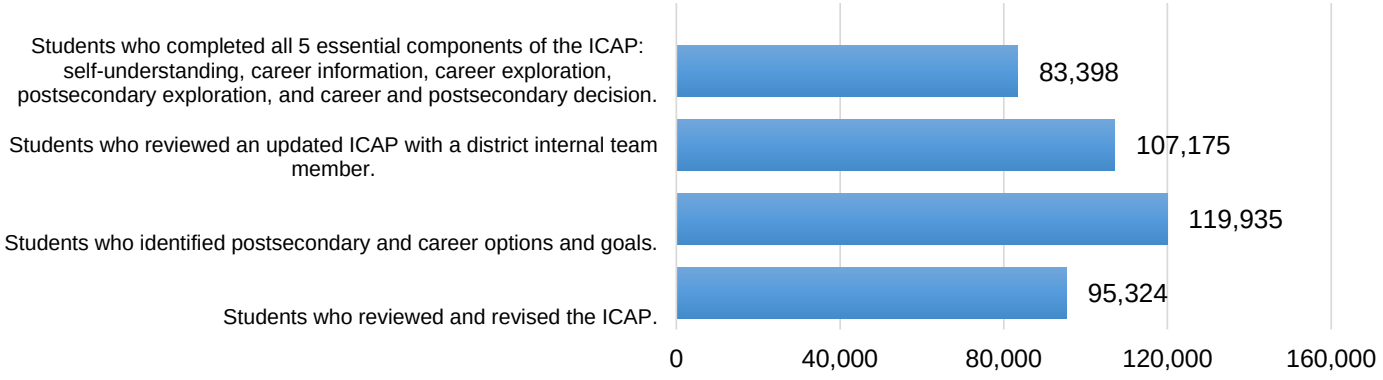

## The District Tool: Career Information Systems (CIS)

The district team selects one of the state approved career information systems (CIS) that best meets the needs of students, team members and the school district. During the 2020 school year, districts had nine CIS options that met state standards. Three hundred and one school districts reported using an approved CIS. While the CIS is an essential component of the career planning process and has the capability of delivering all components, school districts are encouraged to continue using high-quality career and technical education (CTE) curriculum and activities and to collaborate with external organizations that offer high-quality career planning opportunities.

## The Individual Career and Academic Plan (ICAP)

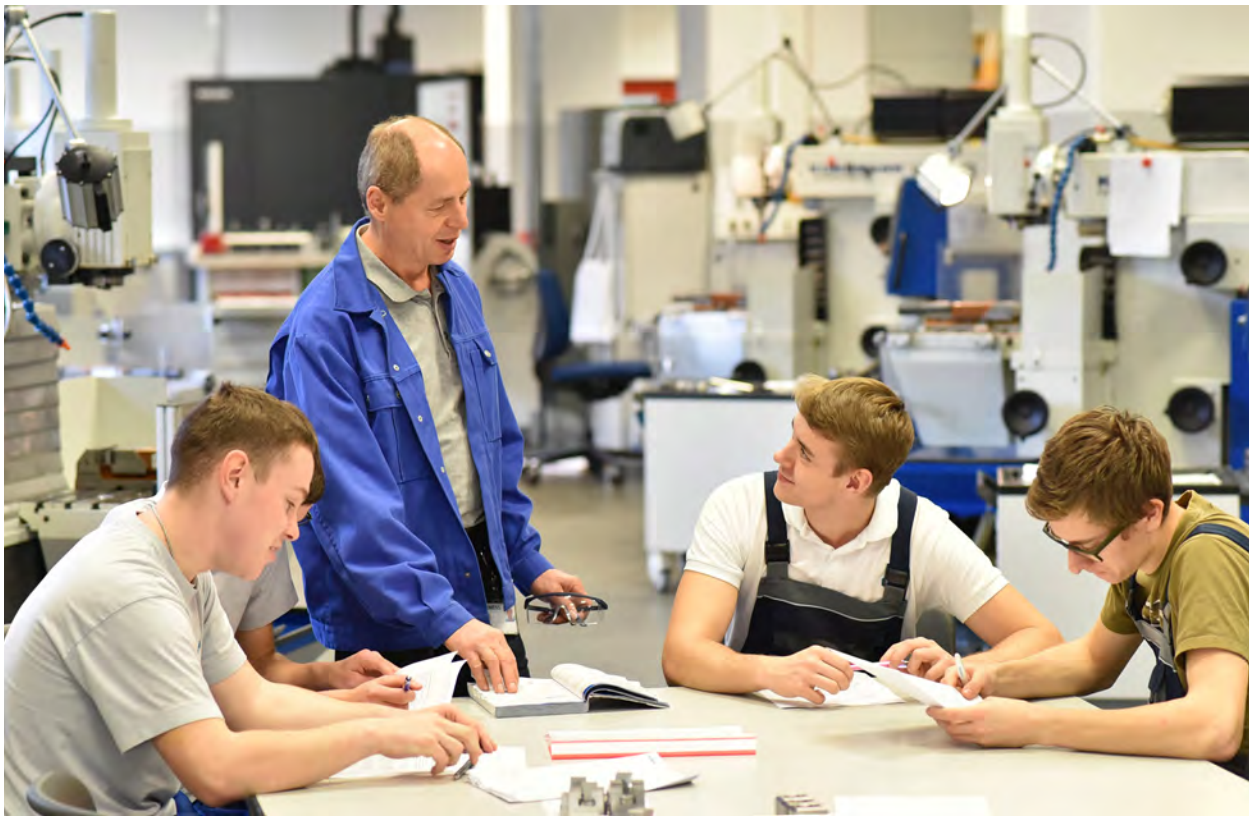
The ICAP is a series of 12, high quality, career-related activities that students complete in grades 8–12. Completed data elements establish students' progress through the ICAP experience. Activities include a four-year core curriculum plan, parent engagement, face-to-face meetings between students and counselors, identification of career and postsecondary goals, alignment of coursework to career goals and annual completion of the five essential components. While completion of the 12 activities was down during AY2020 due to the COVID-19 pandemic, ICAP completions in AY2020 continue to remain strong.

FIGURE 7.2: PERCENT OF ICAP COMPLETIONS: AY20



## High-Quality Career Programming in 2020 and Beyond

Beginning in the fall of 2020, the Bureau of Career and Technical Education, Career and Academic Planning began sponsoring in-depth professional development opportunities for counselors and other stakeholders across the state. A two-part workshop series on re-imagining ICAP and creating best practices trained over 100 educators. Smaller workshops have been offered through state and national conferences, the Area Education Agencies (AEA) and Regional Planning Partnerships (RPPs). Continued and sustained professional development will provide the opportunity to take deeper dives into clarifying the roles and responsibilities of district team members, providing examples of quality district plans and outlining strategies that increase engagement at all levels from counselors, instructors, CTE instructors and work-based learning coordinators to students, parents and external stakeholders.



## Chapter Highlights

Career and academic planning:

- In 2020, Iowa's 330 school districts implemented the career and academic planning process to over 185,000 students in grades 8-12.
- In the academic year 2020, three hundred and four (N-304*) school districts reported career planning outcomes.
- School districts continue to create partnerships with stakeholders outside of the school system creating opportunities for students to have a holistic and authentic career learning experience.

## Chapter 8. Work-Based Learning

This chapter reports the number of work-based learning courses offered and the characteristics of students who took these courses over the past five academic years. Work-based learning courses are identified by the last two digits of the five-digit SCED code; if the last two digits of a SCED code is 98, this course is usually a work-based learning course. All SCED codes ending with digits "98" were selected and screened; any that did not meet the criteria were deleted and not included in the counts. Courses were also selected with titles containing work experience, work-based learning, internship, OJT, MOC, On the job and WBL. It should be noted that other CTE courses may have a work-based learning component, but these are not accounted for in the data presented below. In that sense, the data below should be considered the baseline of work-based learning activity within Iowa school districts.

Figure 8.1 presents the number of work-based learning courses since AY2016. The number of work-based learning courses has grown by 18.0 percent (compound annual growth rate) from 101 courses in AY2016 to 196 courses in AY2020. Figure 8.1 also shows the percentage of college credit contracted work-based learning courses out of all work-based learning courses. The percentage of college credit contracted work-based learning courses peaked in AY2018 at 37.9 percent, and decreased to 19.9 percent in AY2020.

FIGURE 8.1: NUMBER OF WORK-BASED LEARNING COURSES AND PROPORTION OF COLLEGE CREDIT CONTRACTED WORK-BASED LEARNING COURSES: AY16-AY20

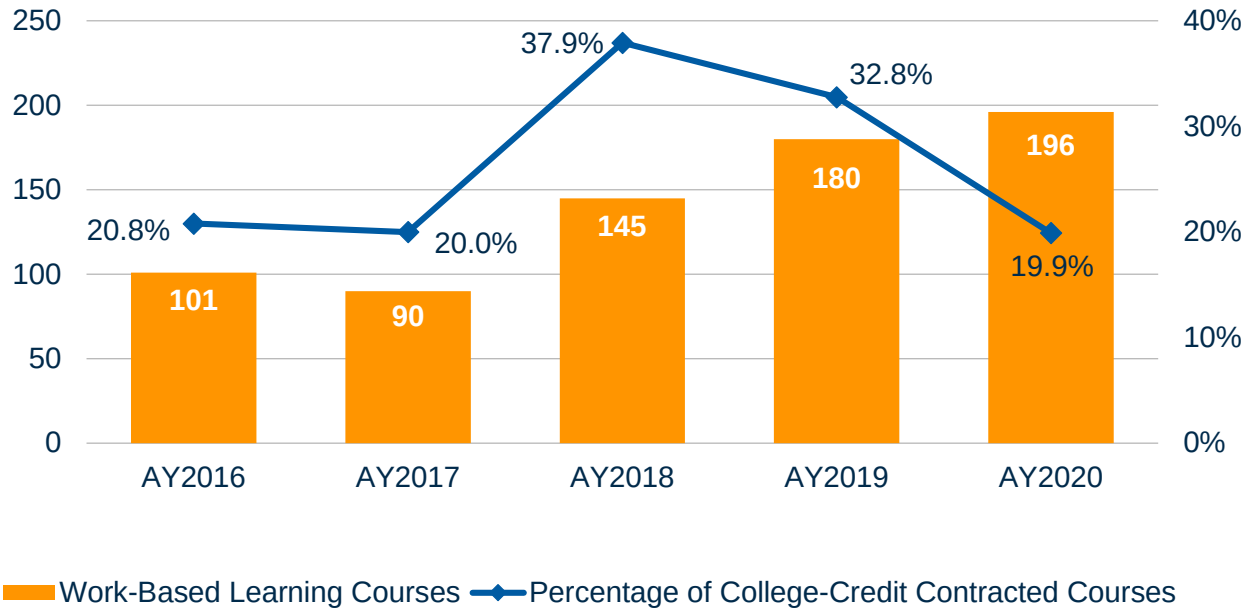


Table 8.1 displays the number of schools that offered work-based learning courses offered by district size. Approximately one-third of the work-based learning courses were offered in districts with a high school enrollment between 100-299 high students. Districts with enrollments between 300-499 high school students and districts with enrollments between 1250-3999 also offered a large portion of work-based learning courses. In terms of compound annual growth rate, districts with a high school enrollment between 100-299 also have the highest growth rate at 23.0 percent, followed by school districts with an enrollment of less than 100 at 21.8 percent and school districts with an enrollment between 1250-3999 at 18.1 percent.

Table 8.2 summarizes the number of school districts that have offered work-based learning courses since AY2016. In AY2016, only 70 school districts in Iowa offered work-based learning courses, and by AY2020, this number had increased to 120— a compound annual growth of 14.4 percent. Specifically, school districts with an enrollment of 100-299 have the highest compound annual growth rate at 20.3 percent, followed by school districts with an enrollment less than 100 and school districts with an enrollment of 300-499, both at 15.8 percent.

TABLE 8.1: NUMBER OF WORK-BASED LEARNING COURSES BY SCHOOL DISTRICT SIZE: AY16 - AY20

| High School Student Enrollment | AY16 | AY17 | AY18 | AY19 | AY20 | CAGR* |
|---|---|---|---|---|---|---|
| <100 | 5 | 3 | 5 | 4 | 11 | 21.8% |
| 100-299 | 28 | 27 | 49 | 73 | 64 | 23.0% |
| 300-499 | 21 | 17 | 32 | 34 | 40 | 17.5% |
| 500-1249 | 21 | 22 | 29 | 31 | 32 | 11.1% |
| 1250-3999 | 19 | 17 | 23 | 29 | 37 | 18.1% |
| >4000 | 7 | 4 | 7 | 9 | 12 | 14.4% |
| Total | 101 | 90 | 145 | 180 | 196 | 18.0% |

TABLE 8.2: NUMBER OF SCHOOL DISTRICTS THAT OFFERED WORK-BASED LEARNING: AY16- AY20

| High School Student Enrollment | AY16 | AY17 | AY18 | AY19 | AY20 | CAGR* |
|---|---|---|---|---|---|---|
| <100 | 5 | 3 | 4 | 4 | 9 | 15.8% |
| 100-299 | 21 | 20 | 38 | 45 | 44 | 20.3% |
| 300-499 | 15 | 12 | 22 | 26 | 27 | 15.8% |
| 500-1249 | 15 | 15 | 19 | 19 | 21 | 8.8% |
| 1250-3999 | 10 | 9 | 14 | 16 | 15 | 10.7% |
| >4000 | 4 | 3 | 3 | 4 | 4 | 0.0% |
| Total | 70 | 62 | 100 | 114 | 120 | 14.4% |

*Note: Students can take CTE courses across different service areas and thus may be counted multiple times.*
** CAGR=Compound Annual Growth Rate*

Table 8.3 summarizes a number of work-based learning courses by service area. In the course file, some work-based learning courses cannot be determined by service area, as the course titles for these were the largest group over the past five years. For courses that can be assigned to a service area, courses in Human Services was the largest group. In terms of compound annual growth rate, the number of courses in Human Services has grown the fastest at 45.6 percent, followed by Health Science at 34.3 percent and Agriculture, Food and Natural Resources at 31.6 percent. The number of courses in Applied Science, Technology, Engineering and Manufacturing decreased by 2.9 percent.

Grade level, gender, race/ethnicity, and eligibility for the national school lunch program for work-based learning students were all investigated from AY2016 to AY2020. Each year, over two-thirds of all students who have taken work-based learning courses were 12th graders (Figure 8.2). Students in 11th grade were the second largest group. Not many 9th and 10th graders participated in work-based learning; in AY2020 only 11 9th graders and 61 10th graders took at least one work-based learning course. Though male students traditionally outnumbered female students in general CTE courses, it was interesting to discover that among all students who took work-based learning courses, more than half were female (Figure 8.3).

TABLE 8.3: NUMBER OF WORK-BASED LEARNING COURSES BY SERVICE AREA: AY16 - AY20

| Service Area | AY16 | AY17 | AY18 | AY19 | AY20 | CAGR* |
|---|---|---|---|---|---|---|
| Business, Finance, Marketing and Management | 28 | 26 | 29 | 27 | 37 | 7.2% |
| Agriculture, Food & Natural Resources | 5 | 5 | 9 | 21 | 15 | 31.6% |
| Information Solutions | 4 | 1 | 1 | 7 | 9 | 22.5% |
| Applied Science, Technology, Engineering and Manufacturing | 9 | 6 | 8 | 4 | 8 | -2.9% |
| Health Sciences | 4 | 4 | 24 | 30 | 13 | 34.3% |
| Human Services | 12 | 11 | 29 | 41 | 54 | 45.6% |
| Unassigned Service Area | 39 | 37 | 45 | 50 | 60 | 11.4% |
| Total | 101 | 90 | 145 | 180 | 196 | 18.0% |

*Note: Students can take CTE courses across different service areas and thus may be counted multiple times.*
** CAGR=Compound Annual Growth Rate*

FIGURE 8.2: WORK-BASED LEARNING STUDENTS BY GRADE LEVEL: AY16 - AY20

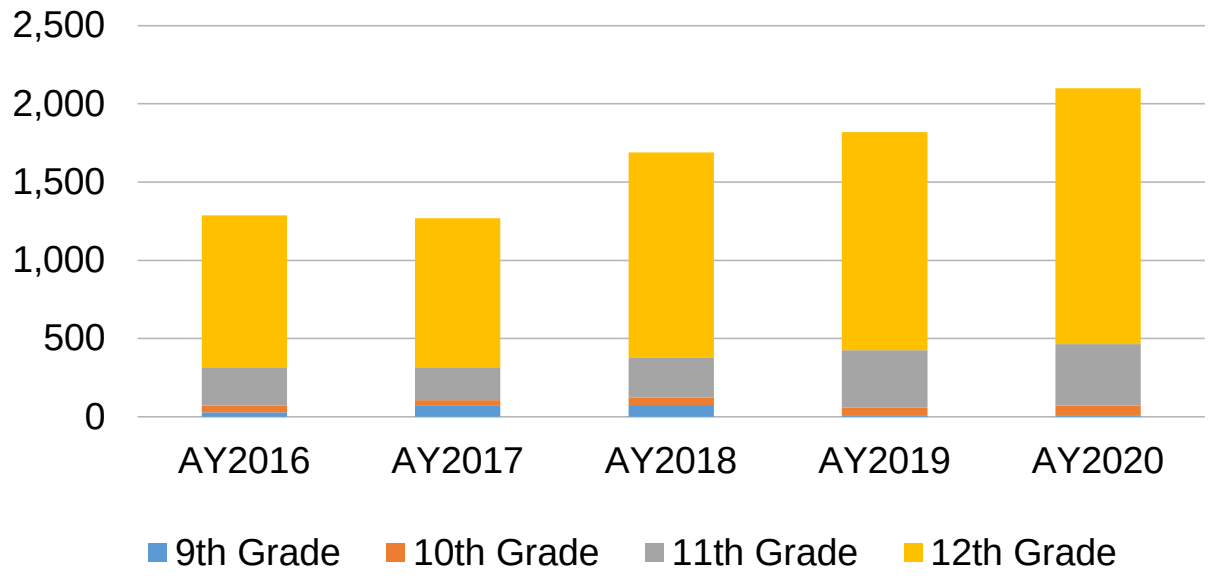
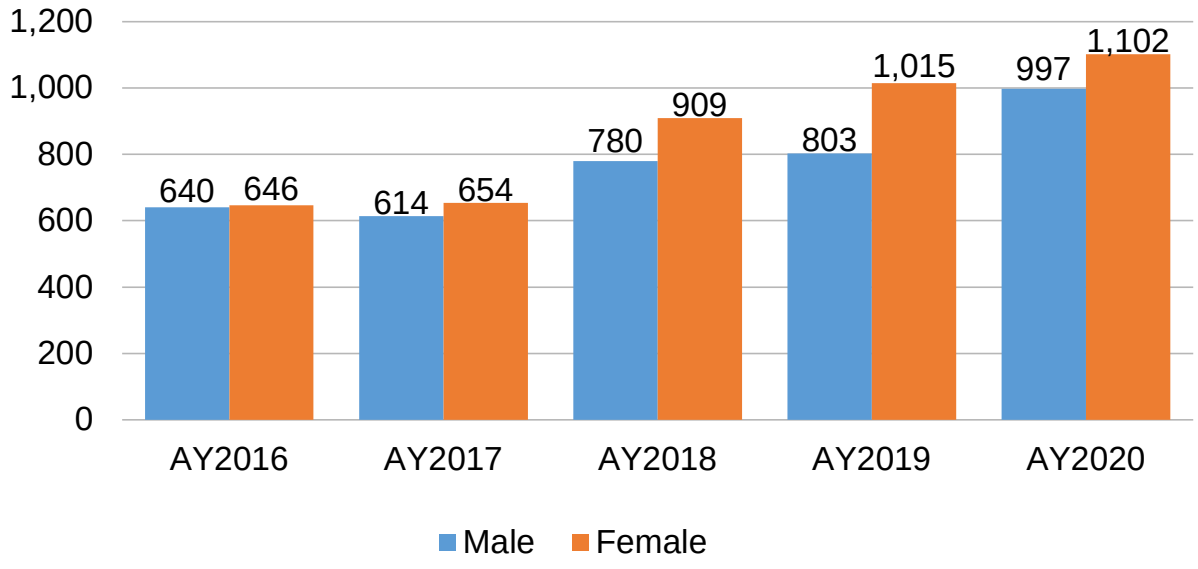



FIGURE 8.3: WORK-BASED LEARNING STUDENTS BY GENDER: AY16 - AY20



Regarding race and ethnicity, findings were consistent with the general secondary CTE student population, with over 80.0 percent being white students (Figure 8.4). For the general secondary CTE population, close to 40.0 percent were eligible for the National School Lunch Program (see chapter 4); however, this group accounted for less than one-third of the work-based learning student population (Figure 8.5). For more information about the comparison of work-based learning students and overall CTE students, please refer to Figure 8.6 to Figure 8.8.

FIGURE 8.4: WORK-BASED LEARNING STUDENTS, WHITE VS MINORITY: AY16 - AY20

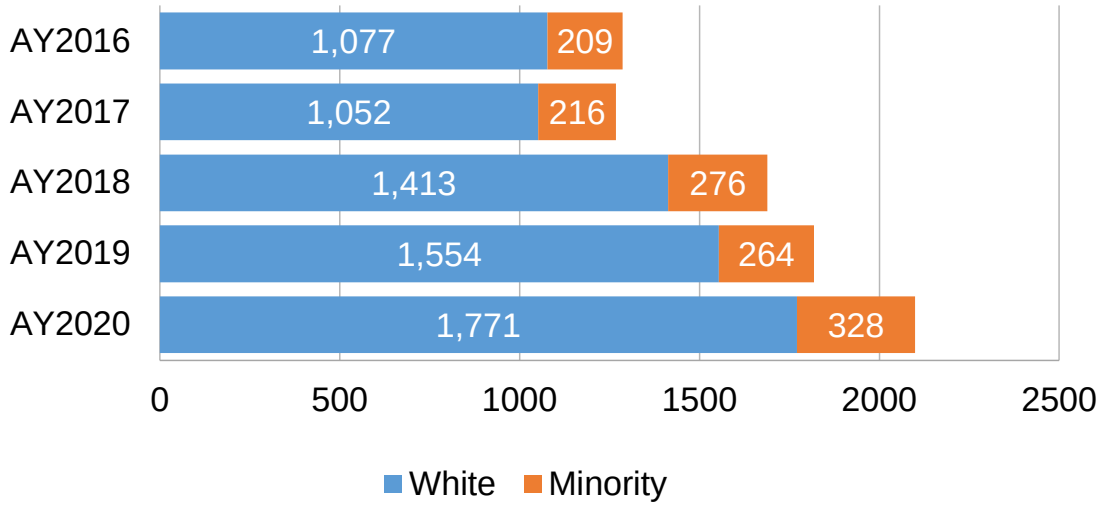



FIGURE 8.5: WORK-BASED LEARNING STUDENTS BY ELIGIBILITY FOR NATIONAL SCHOOL LUNCH PROGRAM: AY16 - AY20

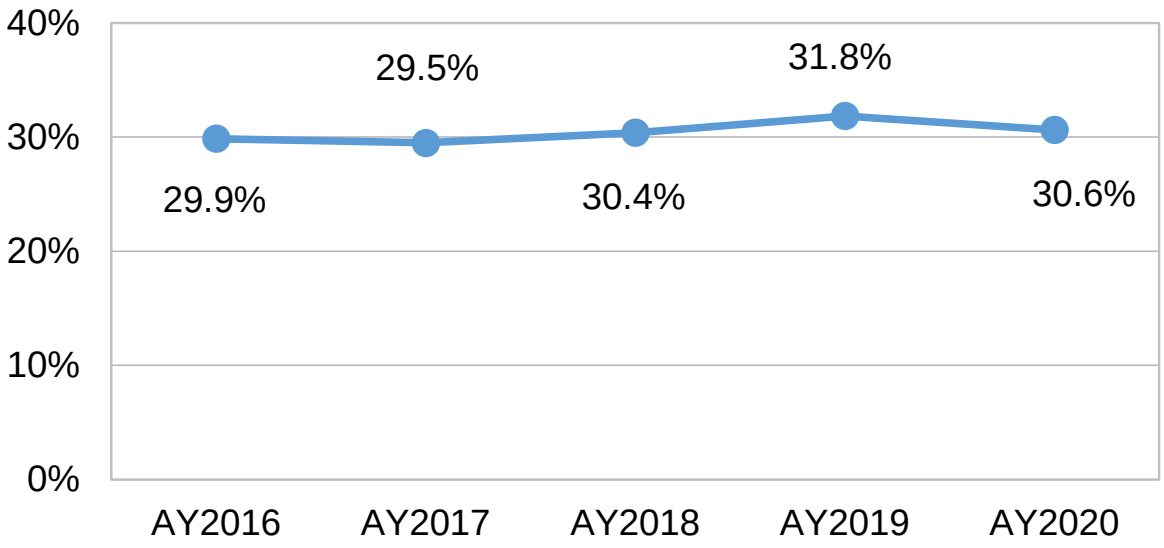


FIGURE 8.6: COMPARISON OF WORK-BASED LEARNING AND OVERALL CTE PARTICIPANTS GENDER DISTRIBUTION: AY16- AY20

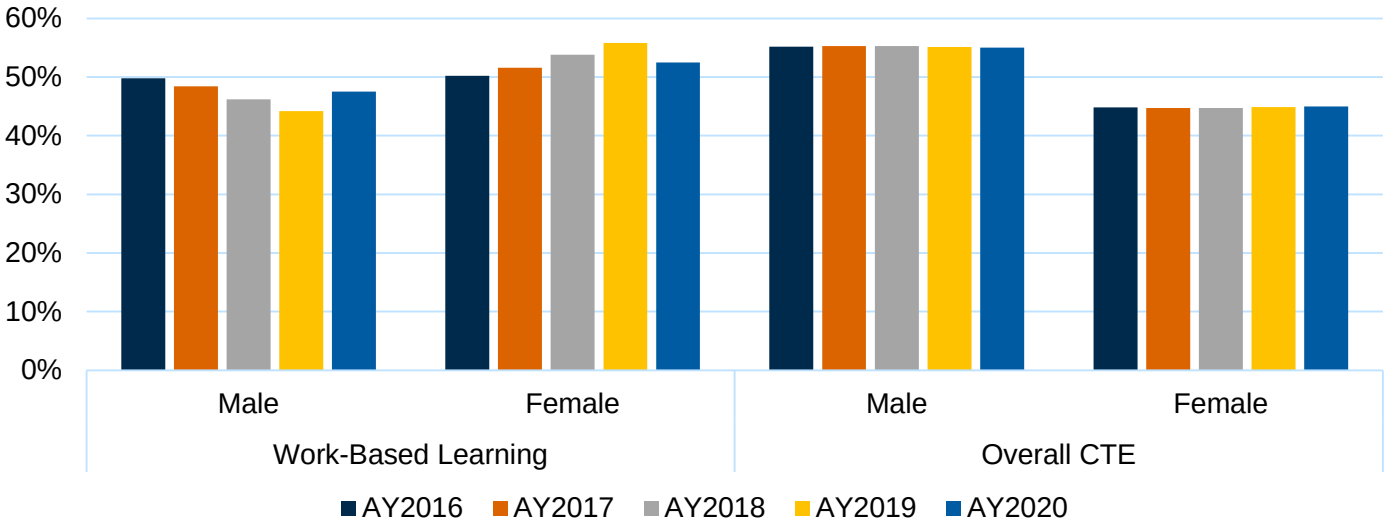



FIGURE 8.7: COMPARISON OF WORK-BASED LEARNING AND OVERALL CTE PARTICIPANTS: DISTRIBUTION OF WHITE AND MINORITY STUDENTS: AY16-AY20

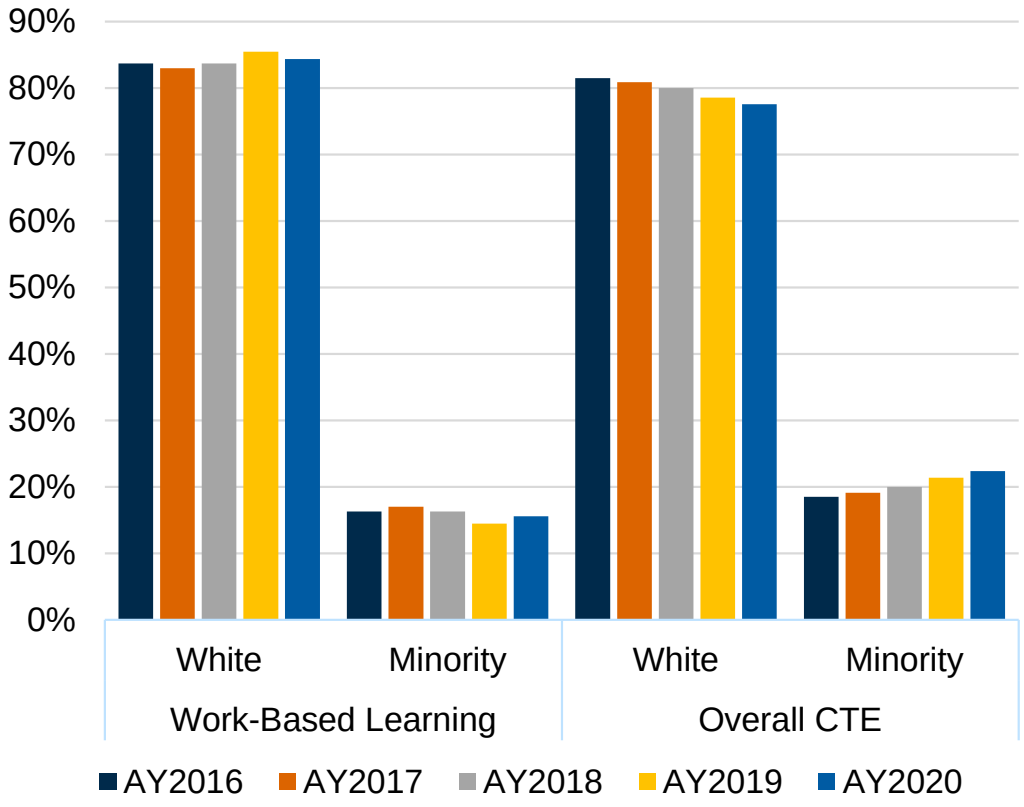
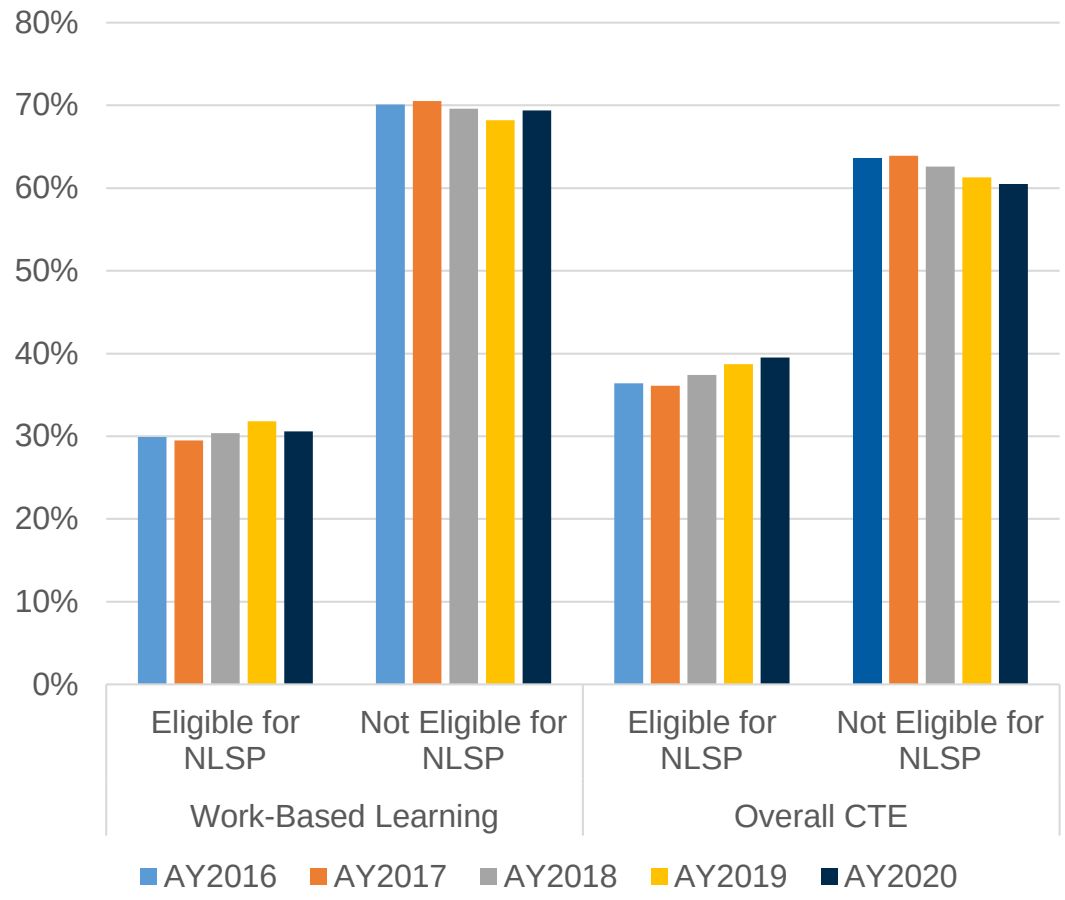


FIGURE 8.8: COMPARISON OF WORK-BASED LEARNING AND OVERALL CTE PARTICIPANTS: DISTRIBUTION OF STUDENTS' ELIGIBILITY FOR NATIONAL SCHOOL LUNCH PROGRAM (NLSP): AY16 - AY20




## Chapter Highlights

Over a five-year time period:

- Between AY2016-AY2020, the number of work-based learning courses rose steadily and peaked in AY2020; however, the proportion of college credit contracted work-based learning courses out of all work-based learning courses decreased to 19.9 percent in AY2020.
- More school districts are offering work-based learning courses in AY2020 than they were in AY2016. There has been an increase in the number of work-based learning courses, regardless of school district size.
- Other than the Applied Science, Technology, Engineering and Manufacturing service area, there was growth in the number of work-based courses in all service areas (including the unassigned category).
- Participation in work-based learning courses by grade level increases as students move from grade 9 to grade 12 and this has not changed over the five-year period.
- Categorizing participation in work-based learning courses by gender, ethnicity and eligibility for the National School Lunch Program, the figures are consistent with the general secondary CTE student population, except for gender. While male participation in general CTE coursework is higher, female students participated at a higher rate in work-based learning courses.

## Chapter 9. Regional Centers

In HF2392, the Secondary Career and Technical Education Task Force, made the following recommendation:

> *Through collaboration and regional partnerships, provide for increased and equitable access to high-quality CTE through a statewide system of regional centers.*

Following up on the above recommendation, HF2392 included language to have the CTE Regional Planning Partnerships (RPPs) focus on exploring the ways to build, expand and sustain regional centers. As established in HF2392, regional centers must include at least four career academy programs and meet one of two participation requirements: 1) two school districts with a combined total of 120 participating students, or 2) a total of four school districts with no minimum enrollment expectation. In essence, a regional center becomes a physical location where high school students may access numerous high-quality CTE programs.

In Iowa, the regional center structure has its basis in the many partnerships that currently exist between school districts and community colleges when delivering high-quality CTE programs. These partnerships typically use the college credit contracted course policy structure to put in place one or both of the above regional center conditions that are now in place within HF2392. It should be noted that not all such partnerships lead to the establishment of a regional center, but many have already done so.

To gauge the current state of how regional centers are distributed across Iowa, in early 2021, a survey was administered by the Department to the 15 community colleges which gathered data regarding current regional center structure, the CTE programs offered within them and the student enrollment. In FY 2020, there were 19 regional centers providing 183 career academy programs to 6,150 high school students from 110 school districts. Among the 19 regional centers, six are located on community college campuses.

Figure 9.1 displays a map of Iowa's current regional centers coded by RPP, with each mirroring the 15 community college regions. Figure 9.2 shows the distribution of career academy programs by service area. Applied Science, Technology, Engineering and Manufacturing was the most significant service area with 71 career academy programs being offered, followed by Health Sciences with 32 programs and Information Solutions with 28 programs. Agriculture, Food and Natural Resources was the smallest service area with only eight career academy programs being offered. Table 9.1 provides more details on each of the regional centers.

FIGURE 9.1: LOCATIONS OF REGIONAL CENTERS

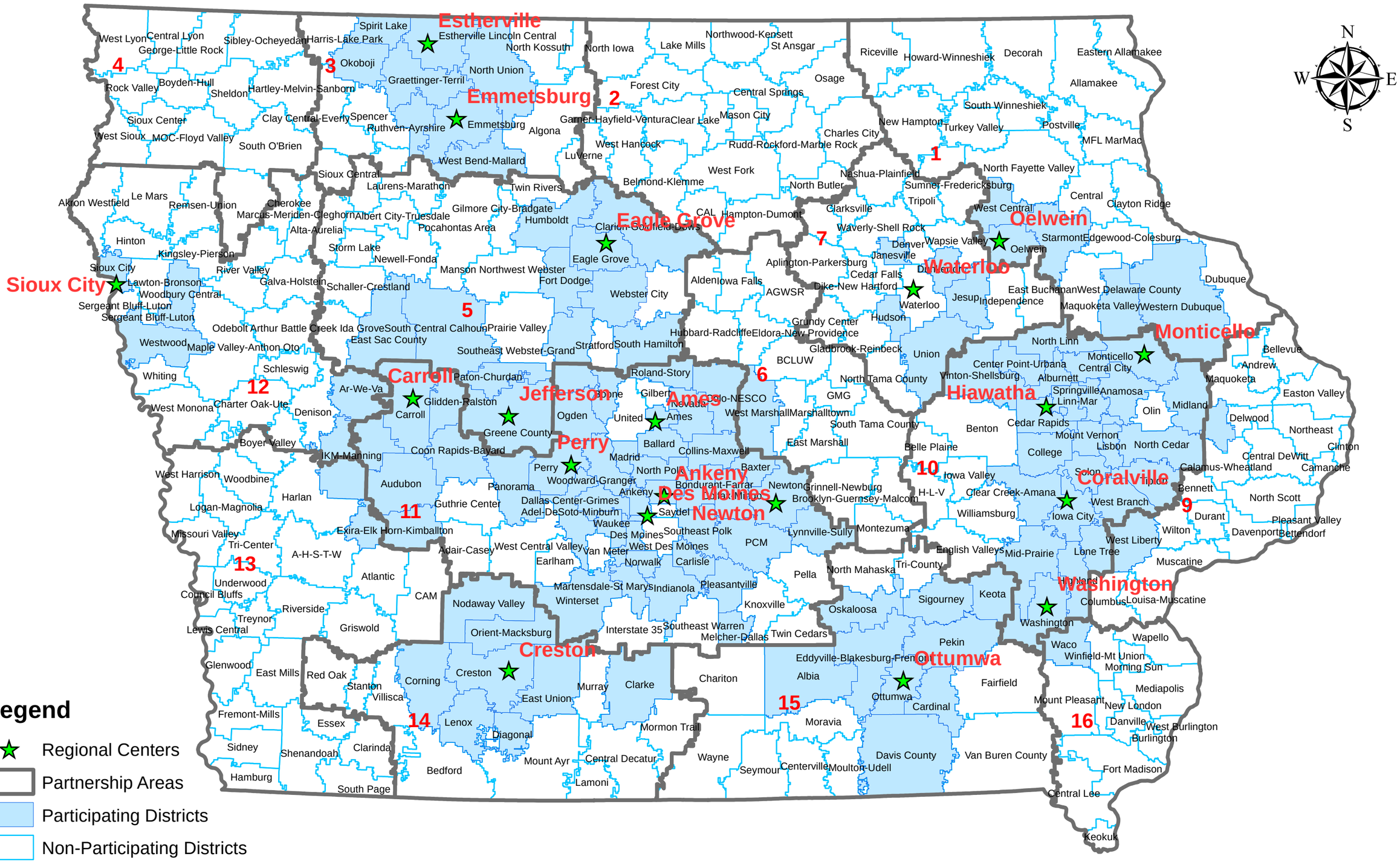


FIGURE 9.2: DISTRIBUTION OF CAREER ACADEMY PROGRAMS BY SERVICE AREA IN FY20

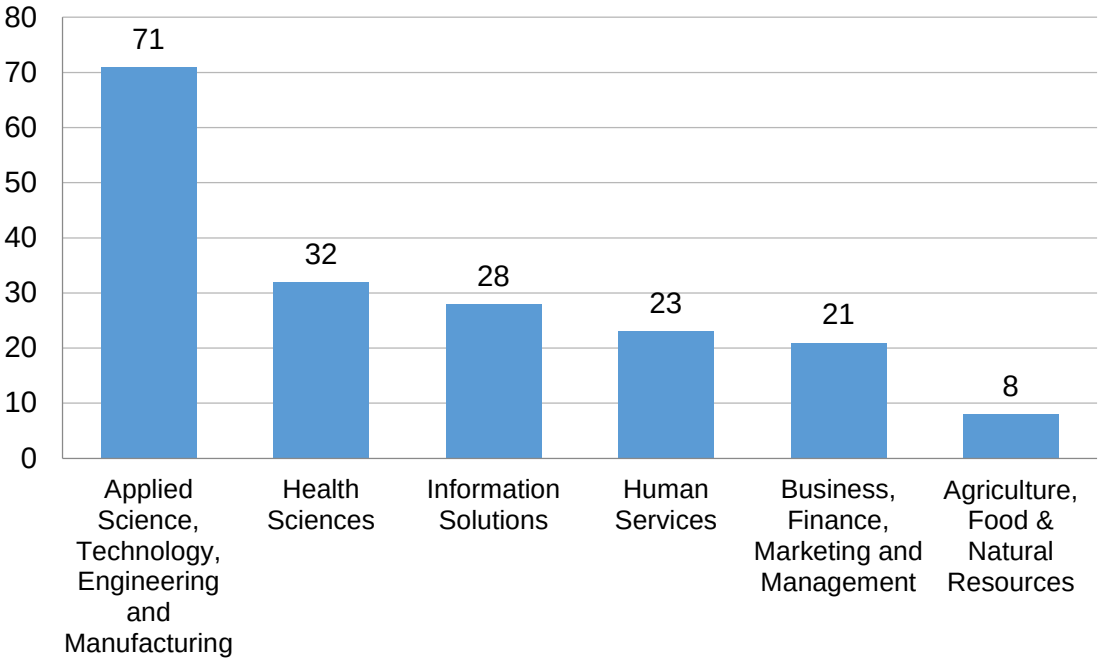



TABLE 9.1: SUMMARY OF REGIONAL CENTERS IN FY20

| RPP Region | Location | Number of K-12 Partners | Career Academy Programs Offered | Student Enrollment |
|---|---|---|---|---|
| 1 | NICC-Oelwein | 3 | Construction, Computer Numerical Control, Health, PLTW, Welding. | 133 |
| 3 | ILCC - Emmetsburg* | 6 | Ag Production Tech, Automotive Tech, Construction Tech, Boat and Water Tech, Farm Equipment and Diesel Tech, Hotel and Restaurant Management, Powersports and Power Equipment Tech. | 25 |
| | ILCC - Estherville* | 6 | Aviation & Airport Management, Computer Programming, Electrical Tech, HVAC Tech, Graphic Design, Criminal Justice, Engineering Tech, Environmental Studies, Human Services & Disability Studies. | 22 |
| 5 | ICCC - Eagle Grove | 5 | 7-Engineering, Computer Science, Manufacturing, Business, Heath, Teacher, Liberal Arts. | 124 |
| | ICCC- Jefferson | 4 | Carpentry, Culinary Arts, Computer Science, Agriculture, Welding, Health Science. | 50 |
| 7 | Waterloo | 10 | Physical Therapy, Emergency Management, PK-12 Teacher Preparation, Medical Lab Technician, Marketing, Finance, IT Web & Mobile, Digital Graphics, Digital Interactive Media, Early Childhood Education, Culinary, Hospitality, Pre-Nursing, Advanced Manufacturing, Electrical, Plumbing, and Sustainable Construction. | 1,003 |
| 10 | KCC - Monticello | 10 | Advanced Manufacturing with Robotics and Welding, Architecture, Construction & Engineering (ACE), Liberal Arts Transfer, Automotive Technology, Computer Programming & Software Development, EMT, Graphics Communication Tech, Hospitality Management, Patient Care, Project Lead the Way. | 305 |
| | KCC - Hiawatha | 9 | Advanced Manufacturing with Robotics and Welding, Architecture, Construction & Engineering (ACE), Pre-Business Administration, Pre-Criminal Justice Transfer, Liberal Arts Transfer, Automotive Technology, Dental, EMT, Patient Care, Pre-Professional Health Careers. | 322 |
| | KCC - Washington | 5 | Advanced Manufacturing with Robotics and Welding, Agriculture, Architecture, Construction & Engineering (ACE), Pre-Business Administration, Liberal Arts Transfer, Automotive Collision, Repair and Restoration, Automotive Technology, EMT, Hospitality Management, Patient Care. | 190 |
| | KCC - Coralville | 7 | Advanced Manufacturing with Robotics and Welding, Agriculture, Architecture, Construction & Engineering (ACE), Pre-Business Administration, Pre-Criminal Justice, Pre-Education, Pre-Social Work, Liberal Arts Transfer, Automotive Collision, Repair and Restoration, Automotive Technology, Computer Programming & Software Development, Dental, EMT, Graphics Communication Technology, Hospitality Management, Patient Care, Pre-Professional Health Careers. | 389 |

**Indicates community college main campus*

| RPP Region | Location | Number of K-12 Partners | Career Academy Programs Offered | Student Enrollment |
|---|---|---|---|---|
| 11 | DMACC-Ankeny* | 13 | Auto Mechanics, Auto Collision Repair, Business, Computer Programming, Computer Aided Design Technology, Criminal Justice, Culinary Arts, Cybersecurity, Diesel Technology, Emergency Medical Technician, Health Occupations/CAN, Advanced Manufacturing, Graphic Design. | 290 |
| | DMACC-Ames | 13 | Auto Collision Repair, Auto Mechanic Technology, Building Trades, Culinary Arts, Health Occupations, Welding, Criminal Justice. | 193 |
| | DMACC-Des Moines* | 11 | Welding, Auto Collision, Auto Technology, Health Occupations, Criminal Justice, Business. | 140 |
| | DMACC-Perry | 8 | Auto Mechanics, Criminal Justice, EMT, C.N.A., Welding. | 97 |
| | DMACC-Carroll | 11 | Applied Engineering, Automotive Technology, Computer Languages, Health Occupations, Welding, Work-Based Learning. | 161 |
| | DMACC-Newton* | 5 | Auto Collision, Building Trades, Certified Nurse's Aide, Culinary Arts, Health Occupations, Welding. | 114 |
| 12 | Sioux City | 3 | Accounting, AFJROTC, Agriculture, Autobody, Auto Tech, Biomedical Science, Business Management, Certified Nurse Assistant, Computer Science, Construction, Culinary, Early Childhood Ed/CDA, Education, Entrepreneurship, Fashion Design, Finance, Graphic Design, Home Building, IT/Network, Interior Design, Manufacturing, Marketing, Mass Communications, Mobile Game App, Pharmacy Tech, Police Science, Plumbing, Surgical Tech, Welding. | 2,411 |
| 14 | SWCC-Creston* | 8 | Automotive Repair Technology, Carpentry & Building Trades, Electrical Technology, Health Science, and Information Technology Systems Networking. | 69 |
| 15 | IHCC-Ottumwa * | 8 | Accounting Asst, Auto Tech, Bioprocessing, Business Specialist, Computer Networking, Computer Software, Diesel Power Technology, Electronics Core, Interactive Media, Machine Technology, Pharmacy Tech and Phlebotomy. | 112 |

**Indicates community college main campus*

The information presented in this chapter yielded the following findings: 1) Regional centers are clustered around the major metropolitan areas in Iowa, which typically have the larger school districts and the higher high school populations to make the regional center viable; 2) regional centers are also established where school district sizes are small and located in the rural areas of Iowa; 3) there are many regions of Iowa where regional centers have not as yet been established. With the implementation of HF2392 beginning to take a foothold across Iowa, the expectation is that the RPPs, through their strategic planning, will begin to explore the viability of regional centers in offering expanded options for students and ensuring equitable access to a variety of high quality CTE programs which also meet the needs of the regional workforce.

## Chapter Highlights

Regional centers:

- In FY20, there were 19 regional centers providing 183 career academy programs to 6,150 high school students from 110 school districts. Among the 19 regional centers, six are located on community college campuses.
- Applied Science, Technology, Engineering and Manufacturing was the largest service area with 71 career academy programs being offered, followed by Health Sciences (32), Information Solutions (28), Human Services (23), and Business, Finance, Marketing and Management (21). Agriculture, Food and Natural Resources was the smallest service area with only eight career academy programs being offered within a regional center.


**COMMUNITY COLLEGES & WORKFORCE PREPARATION**

*PROSPERITY THROUGH EDUCATION*

The Division of Community Colleges and Workforce Preparation within the Iowa Department of Education administers a variety of diverse programs that enhance Iowa's educational system and help to prepare a skilled and knowledgeable workforce. Divided between two bureaus — the Bureau of Community Colleges and the Bureau of Career and Technical Education — the Division is committed to providing and supporting opportunities for lifelong learning. In addition to working with Iowa's 15 public community colleges on state accreditation, program approval, equity review, and data reporting, guidance is also provided in the areas of career and technical education, workforce training and economic development, adult education and literacy, military education, the state mandated OWI education program, the GAP Tuition and PACE programs, Senior Year Plus, the National Crosswalk Service Center, and the Statewide Intermediary Network program.