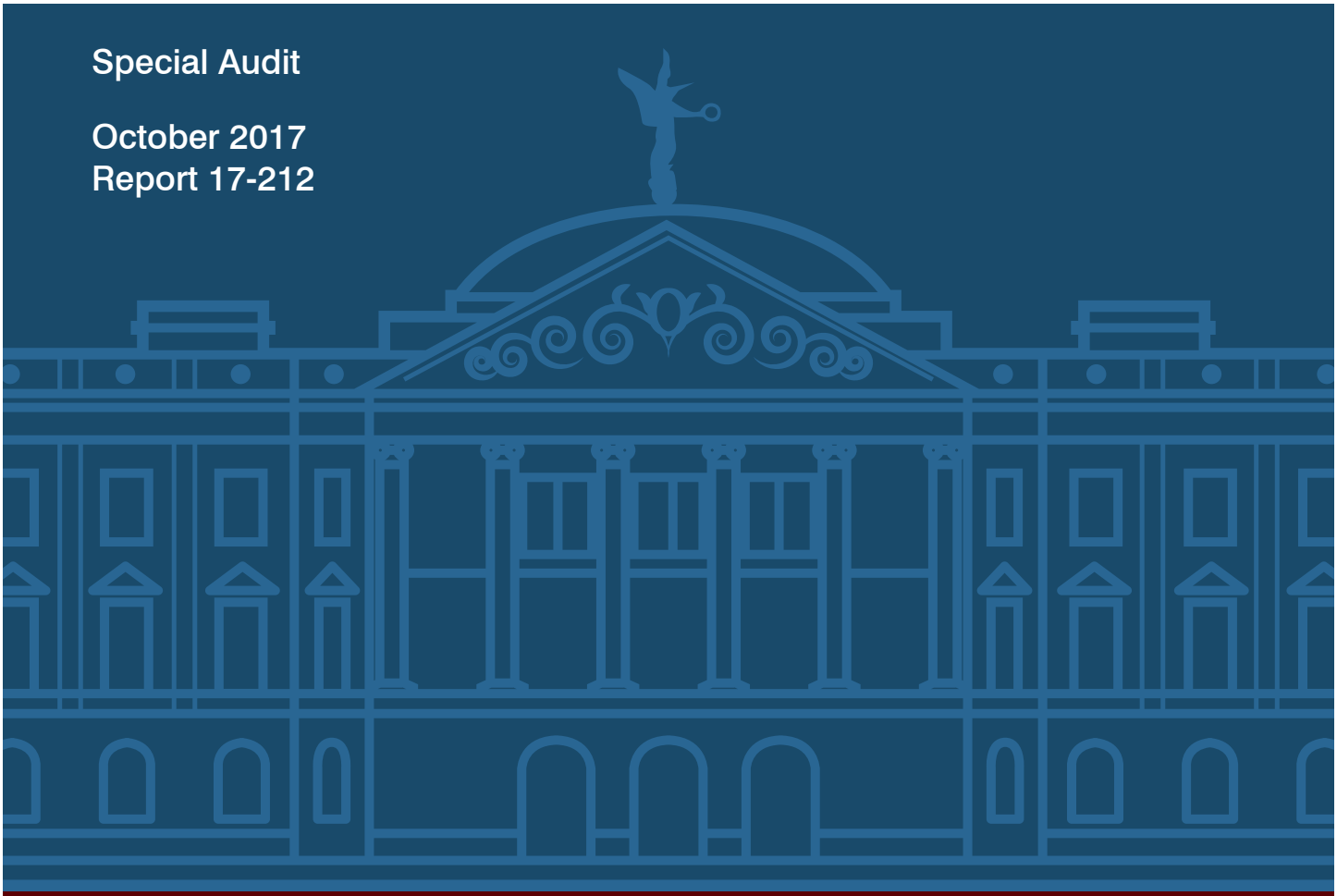
Joint Technical Education Districts

Special Audit

October 2017
Report 17-212



A Report to the Arizona Legislature

Debra K. Davenport
Auditor General

ARIZONA Auditor General
Making a Positive Difference

ARIZONA Auditor General

Making a Positive Difference

The Auditor General is appointed by the Joint Legislative Audit Committee, a bipartisan committee composed of five senators and five representatives. Her mission is to provide independent and impartial information and specific recommendations to improve the operations of state and local government entities. To this end, she provides financial audits and accounting services to the State and political subdivisions, investigates possible misuse of public monies, and conducts performance audits and special reviews of school districts, state agencies, and the programs they administer.

The Joint Legislative Audit Committee

Senator **Bob Worsley**, Chair
Senator **Sean Bowie**
Senator **Judy Burges**
Senator **Lupe Contreras**
Senator **John Kavanagh**
Senator **Steve Yarbrough** (ex officio)

Representative **Anthony Kern**, Vice Chair
Representative **John Allen**
Representative **Rusty Bowers**
Representative **Rebecca Rios**
Representative **Athena Salman**
Representative **J.D. Mesnard** (ex officio)

Audit Staff

Vicki Hanson, Director
John Ward, Manager and Contact Person

Gerrad Cawley, Team Leader
Karl Calderon
Angela Hanson
Steven Tran
Travis Twyman

Contact Information

Arizona Office of the Auditor General
2910 N. 44th St.
Ste. 410
Phoenix, AZ 85018

(602) 553-0333

www.azauditor.gov

STATE OF ARIZONA
OFFICE OF THE
AUDITOR GENERAL

DEBRA K. DAVENPORT, CPA
AUDITOR GENERAL

MELANIE M. CHESNEY
DEPUTY AUDITOR GENERAL

October 31, 2017

Members of the Arizona Legislature

The Honorable Doug Ducey, Governor

Transmitted herewith is a report of the Auditor General, *A Special Audit of Joint Technical Education Districts*. This report is in response to Laws 2016, Ch. 4, §7, and was conducted under the authority vested in the Auditor General by Arizona Revised Statutes §41-1279.03. I am also transmitting within this report a copy of the Report Highlights for this audit to provide a quick summary for your convenience.

The joint technical education districts and other school districts included in our sample for this audit, as well as the Arizona Department of Education, have reviewed the report and indicated that they believe the recommendations made in the report are reasonable and that they plan to implement the recommendations directed to them.

My staff and I will be pleased to discuss or clarify items in the report.

Sincerely,

Debbie Davenport
Auditor General

DD: bh
Enclosure

cc:
The Honorable Diane Douglas,
Superintendent of Public Instruction
Arizona Department of Education

Dr. Sally Downey, Superintendent
East Valley Institute of Technology

Mr. Jeramy Plumb, Superintendent
Mountain Institute of Joint Technical
Education District

Mr. Matt Weber, Superintendent
Northern Arizona Vocational Institute of
Technology

2910 NORTH 44th STREET • SUITE 410 • PHOENIX, ARIZONA 85018 • (602) 553-0333 • FAX (602) 553-0051

Dr. Alan Storm, Superintendent
Pima County Joint Technical Education District

Mr. Greg Donovan, Superintendent
Western Maricopa Education Center

Dr. Mary Kamerzell, Superintendent
Catalina Foothills Unified School District

Mr. Brian Capistran, Superintendent
Glendale Union High School District

Dr. Mike Thomason, Superintendent
Higley Unified School District

Mr. Daniel Streeter, Superintendent
Humboldt Unified School District

Mr. Dean Slaga, Superintendent
Mayer Unified School District

Dr. Michael Cowan, Superintendent
Mesa Unified School District

Dr. Darwin Stiffler, Superintendent
Peoria Unified School District

Mr. Joe Howard, Superintendent
Prescott Unified School District

Mr. David Verdugo, Superintendent
Santa Cruz Valley Unified School District

Mr. Hollis Merrell, Superintendent
Snowflake Unified School District

Mr. Steven Holmes, Superintendent
Sunnyside Unified School District

Dr. Gabriel Trujillo, Superintendent
Tucson Unified School District

Ms. Cyndie Mattox, Superintendent
Winslow Unified School District

Dr. Debbi Burdick, Superintendent
Cave Creek Unified School District

Mr. Fernando Parra, Superintendent
Nogales Unified School District

Dr. Chad Gestson, Superintendent
Phoenix Union High School District

ARIZONA Auditor General
Making a Positive Difference

REPORT HIGHLIGHTS
Special Audit
October 2017

Joint Technical Education Districts

CONCLUSION: The Office of the Auditor General has conducted a special audit of joint technical education districts (JTEDs) pursuant to Laws 2016, Ch. 4, §7. In 1990, the Arizona Legislature enacted statutes that allowed the State's public school districts to form JTEDs for the purpose of improving career and technical education (CTE). Since then, 14 JTEDs have formed throughout the State, and 99 school districts have joined a JTED thereby becoming JTED member districts, leaving only five school districts that offered CTE in fiscal year 2016 not part of a JTED. CTE in Arizona is delivered through one of three models—at JTED central campuses, at JTED member districts' satellite campuses, and at school districts that are not part of a JTED (non-JTED districts). Between fiscal years 2011 and 2016, total state-wide CTE course enrollment grew, but the number of students funded decreased because of a statutory change. Districts shared similarities in CTE delivery and student outcomes, but differences existed both among and within CTE models. Further, although almost half of member districts' CTE programs were duplicated, several challenges limit consolidation opportunities. Additionally, the CTE programs and their content that districts offered were impacted by CTE model, campus locations, and whether there were clear industry standards. In analyzing state-wide fiscal year 2016 spending on CTE, Arizona districts spent approximately $219 million on CTE, nearly half of which was for CTE teacher salaries and benefits. Spending by JTEDs during fiscal years 2012 through 2016 was mostly for instruction and construction but varied among JTEDs due to developmental and operational differences. Districts have implemented practices to address barriers to students' access to and awareness of CTE programs and have taken steps to continue improving CTE program quality, and JTEDs provided member districts with varied services that reflected differences in amounts of JTED monies they allocated to their member districts. Finally, CTE in Arizona faces challenges but also has opportunities to continue improving.

Overview of CTE and JTEDs

Career and technical education (CTE)—Programs for pupils in grades 9 through 12 that consist of an organized set of specialized courses that prepare pupils for occupations that normally do not require a baccalaureate or an advanced degree and provide them with sufficient skills for entry into an occupation.

Source: Arizona Revised Statutes §15-781.

Arizona high school students who attend public schools, charter schools, private schools, or are home schooled can participate in CTE (see textbox). CTE is delivered through one of three models. CTE can be delivered at JTED central campuses that serve students attending districts that are members of the JTED, as well as charter, private, and homeschooled students within the JTED's boundaries (JTED central campuses). CTE can also be delivered at a JTED member district's satellite campus, which is a high school operated by a member district where students attending that school take CTE courses (JTED member districts' satellite campuses). Students attending JTED central campuses or member districts' satellite campuses generate additional funding for their JTEDs. Lastly, CTE can be delivered at high schools that are operated by districts that are not members of a JTED (non-JTED districts). Students attending non-JTED districts do not generate additional funding. State-wide, CTE is primarily funded with JTED monies, which are monies comprising state, local, and county revenues and that are available to JTEDs and their member districts. Some funding also comes from federal grants, primarily the Carl D. Perkins grant. All districts state-wide providing CTE can also receive funding from a state vocational education block grant.

Number of JTEDs, member districts, and total CTE course enrollment increased, but statutory change resulted in fewer students being funded

Between fiscal years 2006 and 2016, the number of JTEDs increased from 10 to 14, and the number of member districts increased from 66 to 99, with most new member districts joining newly formed JTEDs. As a result, by fiscal year 2016, only five school districts that offered CTE were not JTED member districts. Between fiscal years 2011 and 2016, the period for which enrollment data was available, total state-wide CTE course enrollment grew by over 7,000 from 145,993 to 153,154, with most of this growth occurring at member districts' satellite campuses. Although total CTE course enrollment

increased, the number of students eligible for JTED funding decreased by about 2,000 during this time because of a statutory change that took effect in fiscal year 2012 and no longer provided funding for 9th grade students who enrolled in CTE courses.

JTEDs, member districts, and non-JTEDs shared similarities in CTE delivery and student outcomes, but differences existed both among and within models

CTE models shared similarities in CTE delivery and student outcomes—Among the districts we reviewed, students in all three CTE models appear to have spent a majority of class time in a laboratory, field-based, or work-based environment as required by statute. Additionally, we reviewed fiscal year 2016 class sizes for the sampled programs and districts and found that class sizes were similar across the models. Further, fiscal year 2016 high school graduation rates for students who completed two or more CTE courses in a program were likely similar among the three models.

Differences existed in CTE delivery and student outcomes among and within models—Among the districts in our sample, students at JTED central campuses had more class time to practice their skills than students at member districts' satellite campuses or at non-JTED districts likely because JTED central campuses typically offered CTE courses that met for 2 to 3 hours a day, whereas member districts and non-JTED districts typically offered CTE courses that met for 50 to 55 minutes a day. Additionally, although the total years of experience CTE teachers had was similar across the three models, the type of experience varied. CTE teachers at JTED central campuses and member districts' satellite campuses reviewed reported having more industry experience, while CTE teachers at non-JTED districts reported having more teaching experience. Further, we found the quality and amount of equipment at JTED central campuses to be more consistent than at member districts' satellite campuses and non-JTED districts. This was especially true for the Culinary Arts, Automotive Technologies, and Engineering Sciences programs. We also found that, across all three models, the emphasis placed on CTE students earning industry certifications or licenses varied depending on the CTE program teacher. In all three models, there were some teachers who indicated they strongly encourage students to earn industry certifications, while other teachers indicated they do not. Lastly, although some CTE programs offered students opportunities to earn college credit, CTE students attending JTED central campus programs located on community college campuses appeared to have more opportunities to earn college credit. However, we were not able to compare the number of credits students earned because only some districts collected this information.

Almost half of JTED member districts' CTE programs duplicated, but challenges limit consolidation opportunities

State-wide, in fiscal year 2016, almost half of JTED member districts' CTE programs were "duplicated," which means they were offered at two or more satellite campuses within the same member district or at the JTED central campus to which the member district belonged. Of the 953 member districts' CTE programs offered state-wide, 433, or 45 percent, were duplicated. Of these 433 duplicated programs, 250 were offered at more than one satellite campus within a member district, and 255 were offered at a member district satellite campus and at a central campus of that member district's JTED, with 72 programs fitting both categories. However, we identified several challenges that limit opportunities for districts to consolidate duplicated programs. For example, of the 250 duplicated CTE programs offered at more than one satellite campus within a member district, 237, or 95 percent, had large enough enrollments that they likely could not be combined with the same program at other satellite campuses within the member district. Another challenge we identified to consolidating duplicated programs is that member districts often have different daily and annual schedules than the JTED central campuses that serve them. If these schedules do not align, it may be inconvenient for a student to attend a CTE course at a JTED central campus if the satellite program at his/her home school was eliminated. Lastly, students' lack of transportation or lack of time in their own class schedules may also limit consolidation opportunities. Some districts do not provide transportation for their students to attend central campuses, and some students may not have sufficient open periods in their class schedules to attend a 2-to-3-hour-per-day CTE course at a central campus.

CTE program offerings and content impacted by CTE model, location, and industry standards

In fiscal year 2016, the CTE model impacted which CTE programs districts offered students. JTED central campuses more frequently offered Cosmetology and Related Personal Grooming Services, Fire Service, and Medical Assisting Services

than member districts' satellite campuses. This is likely because these programs are costly and require economies of scale that JTED central campuses can more easily benefit from than member districts' satellite campuses. Conversely, member districts frequently offered several programs, including Business Management and Administrative Services, Digital Photography, and Film and TV at their satellite campuses, which were among the least offered CTE programs at JTED central campuses. These programs are likely more easily offered at the member districts' satellite campuses because they are low cost and not as dependent on achieving certain enrollment numbers to warrant costs and investments to start the programs. Further, whether campuses were in rural or urban locations impacted the number and type of CTE programs offered. Urban JTEDs offered 20 different CTE programs at their central campuses, on average, whereas rural JTEDs offered 9 different CTE programs at their central campuses, on average. This was likely due to rural JTEDs not having enough students to justify providing additional programs at their central campuses. Additionally, CTE programs with greater regulatory oversight or clear industry certifications or licenses, such as Nursing Services, Automotive Technologies, and Welding Technologies, tended to have more consistent content. In contrast, those CTE programs that did not have regulatory oversight or clear industry certifications or licenses, including Film and TV and Plant Systems, had the least amount of consistency.

Nearly half of state-wide CTE spending for CTE teacher salaries and benefits, but spending among JTEDs varied due to developmental and operational differences

In fiscal year 2016, JTEDs', JTED member districts', and non-JTED districts' CTE spending totaled about $219 million, nearly half of which was for CTE teachers' salaries and benefits. Districts spent about $147 million on CTE from funding sources restricted for CTE as well as $72 million from other funding sources. In addition to analyzing state-wide spending on CTE, we also reviewed how JTEDs spent their monies and found that during fiscal years 2012 through 2016, JTEDs reported spending about $117 million each year, on average, and spent the most on instruction and construction. However, spending varied among the JTEDs because of key developmental and operational differences. For example, four JTEDs constructed new campuses, added additional buildings, or completed renovations to their central and satellite campuses during this time period. As a result, 16 to 46 percent of these four JTEDs' spending was on construction costs during fiscal years 2012 through 2016, compared to the 0 to 9 percent that other JTEDs spent during this period. Additionally, some of the spending variance among JTEDs also likely reflects certain operational differences, such as whether a JTED owns its central campus or operates its central campus programs in conjunction with a community college, that lead to JTEDs reporting costs differently.

JTEDs, member districts, and non-JTEDs have implemented practices to address barriers to students' access to and awareness of CTE programs and have taken steps to continue improving CTE program quality

To improve students' access to CTE programs, some JTEDs have built new campuses in locations that are strategically placed within their district boundaries or offer CTE programs at community colleges that have campuses located throughout their districts. Additionally, some JTEDs and JTED member districts provide transportation or bus passes to students to help students attend JTED central campus programs, and one JTED offers tuition-free summer school classes for state-mandated academic courses so students have more time in their schedules to take CTE. Further, some JTEDs reported that they advertised on the radio and social media and reached out to charter and private schools and home school providers to increase awareness of the CTE programs they offer. Additionally, some districts have taken various steps to continue improving the quality of their CTE programs. Specifically, some JTEDs and JTED member districts provide mentor teachers to help new CTE teachers know what to expect as a teacher and help the new CTE teacher in critical areas like classroom management. One JTED pays teachers to participate in industry externships to ensure teachers maintain their industry skills and stay current with industry changes. Additionally, many districts participate in the AZ Curriculum Consortium, which allows CTE teachers from across the State to post lesson plans and activities that they have developed and share them with other CTE teachers. Further, districts secured large donations from industry partners, including medical equipment and supplies donated to one JTED valued at over $170,000 and diesel and gasoline engines donated to another JTED valued at over $45,000. Lastly, one large urban JTED has made its industry advisory boards from its own central campus programs available to its member districts so that they do not have to organize their own and do not have to compete with other teachers or member districts for the same industry representatives.

JTEDs provided member districts with varied services that reflected differences in amounts of JTED monies allocated to their member districts

JTEDs we reviewed provided their member districts with services that are required by statute, such as teacher professional development opportunities and CTE program review, but they also provided additional services, such as paying for students' certification costs, which are not required by statute. These additional services varied between the JTEDs and often depended on how much JTED monies generated by satellite campus enrollment JTEDs allocated to their member districts. JTEDs we reviewed allocated between 36 and 81 percent of JTED monies generated by satellite campus enrollment to their member districts in fiscal year 2016. JTEDs that provided more additional services allocated less JTED monies to their member districts, and those JTEDs that provided fewer additional services allocated more JTED monies to their member districts. For example, the JTEDs that allocated the lowest percentages of monies to member districts paid for students' certification costs, paid for membership fees in the AZ Curriculum Consortium, and financially supported career and technical student organizations (CTSOs) at their member districts. Conversely, the JTED that allocated the highest percentage of JTED monies to its member districts did not pay for memberships in the AZ Curriculum Consortium and did not financially support member districts' CTSOs. Officials at this JTED indicated that the high percentage of JTED monies allocated to its member districts should provide enough financial resources for its member districts to provide these services without additional financial help from the JTED.

CTE in Arizona faces challenges but also has opportunities

Broad challenges facing CTE—Increased math and science requirements and preparation for standardized tests leave less room in students' class schedules to take CTE courses. Further, some districts do not provide transportation for their students to attend JTED central campuses, so students at these districts must provide their own transportation or take public transportation if they want to take CTE courses at their JTED's central campuses. Lastly, district officials from many of the districts we visited discussed the difficulty in recruiting and retaining CTE teachers for some programs, especially nursing, construction, welding, and information technology-type CTE programs, because it was difficult to compete with the wages that these individuals can earn in their industry.

Opportunities exist to improve CTE—Districts also have opportunities to continue improving CTE. Specifically, JTEDs and their member districts should work together to coordinate their school calendars, bell schedules, and testing schedules, which may encourage more students to enroll in JTED central campus courses. Additionally, some districts' successful programs have attracted industry partners to their campuses and neighborhoods, providing jobs to students who have completed CTE programs and enhancing learning experiences for students still in CTE programs. Further, some JTED officials indicated that they regularly meet with their cities and other organizations, such as local chambers of commerce, regional economic development groups, and legislative committees, to discuss future workforce needs and how JTEDs can help prepare students to meet these needs. Lastly, although JTEDs, member districts, and non-JTED districts are required to report certain data to the Arizona Department of Education (ADE) annually, there is additional data that they are not required to collect or report but that may be useful in helping them to evaluate the effectiveness and efficiency of their CTE programs. This includes ensuring all students participating in CTE programs are included in statewide CTE course enrollment data, collecting industry certifications and college credits that their students earn, calculating retention rates for CTE programs, and using detailed cost data to calculate performance measures such as total costs per CTE program and cost per program completer.

Recommendations:

- JTEDs and their member districts should explore opportunities to coordinate their school calendars, bell schedules, and testing schedules to help eliminate challenges for students who would like to attend CTE programs at JTED central campuses.
- JTEDs, member districts, and non-JTED districts should continue to work with local businesses and industry to provide learning opportunities for all students in their CTE programs and work with their cities and the State to identify and develop CTE programs that will meet future local and state workforce needs.
- JTEDs, member districts, non-JTED districts, and ADE should work together to develop and implement ways to consistently collect data for all students participating in CTE programs pertaining to industry certifications and college credits their students earn, calculate retention rates, and use cost data to calculate performance measures to evaluate their programs.

A copy of the full report is available at: www.azauditor.gov | Contact person: John Ward (602) 553-0333

TABLE OF CONTENTS

TABLE OF CONTENTS

TABLE OF CONTENTS

Tables

TABLE OF CONTENTS

Figures

Photo

INTRODUCTION

Objectives

The Office of the Auditor General has conducted a special audit of joint technical education districts (JTEDs) pursuant to Laws 2016, Ch. 4, §7, and under the authority vested in the Auditor General by Arizona Revised Statutes (A.R.S.) §41-1279.03. The legislation directs auditors to review the growth in member districts' satellite campus programs compared to JTED central campus programs (Chapter 1); the delivery of career and technical education (CTE) at schools that are not included in a JTED compared to the delivery of CTE at a JTED central campus as well as the delivery of CTE at a JTED central campus compared to the delivery of CTE at a member district satellite campus (Chapter 2); the duplication of JTED program and course offerings (Chapter 3); the variety and scope of JTED program and course offerings (Chapter 4); the spending habits and administrative spending of JTEDs (Chapter 5); the efficiency of JTED practices (Chapter 6); and the relationship between JTEDs and member districts and services provided to member districts (Chapter 7). The legislation also directs auditors to review any other issues necessary for the audit's completion as determined by the Auditor General. In conducting the work for the areas specifically listed in legislation, auditors also identified several challenges and opportunities facing CTE in Arizona. This information is reported in Chapter 8.

Overview of CTE and JTEDs

In Arizona, high school students who attend public schools, charter schools, private schools, or are home schooled can participate in CTE (see textbox). CTE students take specialized courses within specific programs that prepare them for careers in various technical fields, such as welding, automotive technology, health services, and culinary arts. CTE instruction is delivered in various settings, including at JTED central campuses, on satellite campuses at school districts that are members of JTEDs, and at school districts that are not affiliated with a JTED (see pages 2 through 4 for more information on each of these three models). In fiscal year 2016, there were 14 JTEDs, 99 JTED member districts, and 5 districts that offered CTE but were not part of a JTED.[1] In fiscal year 2016, Arizona students state-wide filled over 153,000 seats in CTE courses and participated in 68 CTE programs.

Career and technical education (CTE)—Programs for pupils in grades 9 through 12 that consist of an organized set of specialized courses that prepare pupils for occupations that normally do not require a baccalaureate or an advanced degree and provide them with sufficient skills for entry into an occupation.

Source: A.R.S. §15-781.

CTE comprises courses and programs—In Arizona, CTE comprises a sequence of specialized courses to prepare students in grades 9 through 12 for occupations that normally do not require college degrees and that provide students with sufficient skills to enter an occupation upon completion of a CTE program.[2] For example, students completing a welding CTE program are required to take a sequence of at least two courses, including Welding Technologies Core Curriculum and Welding Technologies, and should be qualified to work as an entry-

[1] In fiscal year 2016, five charter schools also offered CTE and reported filling about 1,500 seats in CTE courses and participated in six CTE programs. Enrollment in the CTE programs at these charter schools was about 1 percent of total state-wide CTE course enrollment and was not included in the analysis for this report. Almost all of this enrollment was in an Animal Systems program at one charter school. Throughout the report, total CTE course enrollment refers to "seats filled" rather than "students enrolled" because districts report students enrolled by CTE course to the Arizona Department of Education. This means that one student would be counted in the CTE enrollment numbers multiple times if he/she occupies a course seat in more than one CTE course. Auditors used this "duplicated enrollment" number for analysis in this report because an unduplicated CTE enrollment number was not available.

[2] Some school districts also provide exploratory CTE courses for students in grades 7 and 8 to introduce them to available CTE programs.

level welder after successfully completing this sequence. The Arizona Department of Education (ADE), CTE Division, reviews course information submitted by each school district offering CTE programs to determine whether the courses qualify as CTE courses within one of the ADE-approved, state-wide CTE programs and are therefore eligible for JTED and state vocational education block grant monies (see pages 5 through 7 for information about these funding sources).[3] In fiscal year 2016, ADE had approved 73 state-wide CTE programs (see Table 4 in Appendix A, page a-1, for a list of the 73 CTE programs). Five of the ADE-approved CTE programs did not have any enrolled students in fiscal year 2016.[4] Laws 2016, Ch. 4, §2, introduced new requirements for CTE courses and programs to be eligible for JTED monies such as requiring a majority of instructional time to be conducted in a laboratory, field-based, or work-based environment, which is described in more detail in Chapter 2 (see page 14). Further, Laws 2016, Ch. 4, §6, required ADE to review the 73 CTE programs to determine whether they complied with these new requirements and therefore continued to be eligible for JTED monies. ADE determined that 7 of the 73 programs did not meet all statutory requirements necessary to qualify for JTED monies (see Table 4 in Appendix A, page a-1). Therefore, although school districts can still offer these programs, they are not eligible for JTED monies beginning in fiscal year 2017.

Creation and history of JTEDs—In 1990, the Arizona Legislature enacted statutes that allowed the State's public school districts to form JTEDs for the purpose of improving CTE offerings and serving students more cost efficiently.[5] Statute requires school districts interested in forming a JTED to complete a study to determine the need for a JTED in an area consisting of at least two school districts and to develop a plan for establishing and operating a JTED, including a proposed budget based on a reasonable estimate of student enrollment in the proposed JTED. If the forming school districts' governing boards and the Arizona State Board of Education approve the study and plan, then school districts can form a JTED upon voters' approval in each district. The governing board members for the newly formed JTED are initially appointed by the governing boards of the forming school districts and must include at least one individual who is not currently a member of any school board. If less than five districts are participating in the newly formed JTED, the initial composition of the JTED's board must include at least two individuals who are not currently board members of a school district. These board members serve until the next general election when voters choose governing board members for 4-year terms. A school district that wants to join an existing JTED must first receive approval from the JTED's governing board and then receive approval from its own voters during a general election. The school districts that form a JTED or join an existing JTED are commonly referred to as "member districts." The East Valley Institute of Technology (EVIT) was the first JTED established in 1991. Since then, 13 other JTEDs have been formed state-wide, with the Southwest Technical Education District of Yuma (STEDY) being the most recently established JTED in fiscal year 2016.

CTE delivered through three models—CTE is delivered through one of three models—at a JTED central campus, at a JTED member district's satellite campus, or at a school district that is not part of a JTED (non-JTED district).

- **JTED central campuses—**In this model, a JTED provides CTE at one or more central campuses to students from its member districts and may also provide CTE to students from charter schools, private schools, or home schools located within its boundaries. A JTED may own or lease its central campus facilities. Some JTEDs that lease space partner with community colleges to use their facilities and teachers. Students attending JTED central campuses usually spend part of their day at the high schools they regularly attend taking academic and other elective courses, and part of their day at the JTED central campus taking CTE courses that are typically offered daily in 2- to 3-hour blocks.

---

[3] In addition to the ADE-approved, state-wide CTE programs, individual school districts may offer local CTE programs where a specific industry need has been identified that may not be an industry need state-wide. ADE must also approve these local CTE programs. Additionally, in fiscal year 2016, 12 school districts offered the Junior Reserve Officers' Training Corps (JROTC) program, which is a federal program sponsored by the United States Armed Forces. This program is also in addition to the ADE-approved state-wide CTE programs.

[4] The five programs without any enrolled students in fiscal year 2016 were Food Products and Processing Systems, Heavy/Industrial Equipment Maintenance Technologies, Medical Imaging Support Services, Respiratory Therapy Technician, and Surgical Technician. For a full listing of the 73 programs, see Table 4 in Appendix A, page a-1.

[5] Laws 1990, Ch. 248, §1, enacted A.R.S. §15-391, et seq.; H.B. 2700 Summ., 05/09/06, 47th Leg., 2d Reg. Sess., Ariz. Sess. Laws 2006.

Pursuant to A.R.S. §15-393, a JTED and its member districts receive up to a combined 1.75 average daily membership (ADM) for each student in grades 10 through 12 attending classes at a central campus. ADM is a measure of total student enrollment based on the number of days a student is enrolled during the first 100 days of the school year. ADM is used for funding purposes and does not represent the actual number of students participating in CTE. For example, a student would generate 1.0 ADM for the student's regular school district if the student enrolled in at least four non-CTE courses that each met for at least 1 hour each school day at his/her home district and 0.75 ADM for the JTED if the student enrolled in 2.5 hours of CTE courses at a JTED central campus. If an otherwise full-time student enrolls in more than one JTED CTE program, the student's additional ADM is still no more than 0.75. The monies that the 1.0 ADM generates are distributed to the member district, and the monies that the additional 0.75 ADM generates, commonly referred to as "central ADM," are distributed to the JTED. If the JTED chooses to share a portion of the monies generated by the additional 0.75 ADM with its member districts, the districts determine and document in an intergovernmental agreement (IGA) how the funding for each student will be shared between the JTED and its member districts. For more discussion on these relationships, see Chapter 7 (pages 43 through 45).

JTED central ADM example

The following table illustrates ADM and associated base operational funding generated for a student who enrolled in at least four non-CTE courses that each met for at least 1 hour each day at his/her home district and enrolled in 2.5 hours of CTE courses at a JTED central campus in fiscal year 2016.

District	ADM	Base level amount[1]
Member district	1.00	$3,600
JTED	0.75	2,700[2]
Total	**1.75**	**$6,300**

1 The base level is the per ADM amount school districts receive as part of the state equalization formula, primarily funded from local property taxes. However, districts' ADM is additionally weighted based on several factors such as type of students served and teacher experience. Districts also receive state monies through additional statutory formulas such as classroom site, instructional improvement, and district additional assistance formulas. These additional funding factors are not included in this example.

2 Laws 2015, Ch. 15, §15, required that JTEDs with student counts of over 2,000 be funded at 95.5 percent of the base level amount. In fiscal year 2016, this applied to only the 3 largest JTEDs, and the remaining 11 JTEDs were funded at 100 percent.

- **JTED member districts' satellite campuses—** JTED member districts' satellite campuses are those owned or operated by a JTED member school district where the member district offers CTE courses and programs on its regular high school campus or campuses. The JTED provides services to the member district, including professional development for its CTE teachers and review of CTE programs offered at the member district to ensure quality and compliance with state laws such as those pertaining to course content, appropriateness of equipment, and the amount of time that students spend in laboratory, field-based, or work-based environments.[6] Students attending a JTED satellite campus spend their entire school day at the member district's high school where they take CTE courses that are typically offered daily

JTED satellite ADM example

The following table illustrates ADM and associated base operational funding generated for a student who enrolled in at least four non-CTE courses that each met for at least 1 hour each day and one or more CTE courses at the student's home district in fiscal year 2016.

District	ADM	Base level amount[1]
Member district	1.00	$3,600
JTED	0.25	900[2]
Total	**1.25**	**$4,500**

1 The base level is the per ADM amount school districts receive as part of the state equalization formula, primarily funded from local property taxes. However, districts' ADM is additionally weighted based on several factors such as type of students served and teacher experience. Districts also receive state monies through additional statutory formulas such as classroom site, instructional improvement, and district additional assistance formulas. These additional funding factors are not included in this example.

2 Laws 2015, Ch. 15, §15, required that JTEDs with student counts of over 2,000 be funded at 95.5 percent of the base level amount. In fiscal year 2016, this applied to only the 3 largest JTEDs, and the remaining 11 JTEDs were funded at 100 percent.

6 A.R.S. §15-393(L)(10)(b) requires JTEDs to provide ongoing evaluation and support of member districts' satellite campus programs and courses to ensure quality and compliance.

for 50 to 55 minutes each. However, some CTE courses at satellite campuses are organized into 1.5- to 3-hour blocks that meet three to five times weekly.

Students in grades 10 through 12 attending a JTED member district's satellite campus and taking both CTE and non-CTE courses can generate up to 1.25 ADM for funding purposes. For example, a student would generate 1.0 ADM for the student's regular school district if the student enrolled in at least four non-CTE courses that each met for at least 1 hour each school day and 0.25 ADM for the JTED if the student enrolled in one or more CTE courses at the student's home district. If an otherwise full-time student enrolls in more than one JTED CTE program, the student's additional ADM is still no more than 0.25. The monies that the 1.0 ADM generates are distributed to the member district, and the monies that the additional 0.25 ADM generates, commonly referred to as "satellite ADM," are distributed to the JTED, which retains a portion of the satellite ADM funding to cover the cost of providing various services, such as professional development and program review to member districts. The JTED then allocates the remaining portion of these monies to the member district as determined and documented in an IGA between the JTED and member district about how the funding for each student will be shared between the two districts. For more discussion on these relationships, see Chapter 7 (pages 43 through 45).

- **Non-JTED districts—**Five school districts that provided CTE to their students in fiscal year 2016 were not part of a JTED. At non-JTED districts, students generally attend CTE courses at the high schools they regularly attend, and CTE courses are typically offered daily for 50 to 55 minutes each. Unlike students attending CTE courses at JTED central campuses or JTED member districts' satellite campuses, students in these districts do not generate the additional 0.75 (central) or 0.25 (satellite) ADM. District officials at one of the three non-JTED districts that auditors visited indicated that they have not joined a JTED because they did not believe that a majority of voters within their district boundaries would approve the district joining a JTED, which would allow the JTED to levy an additional 5-cent property tax (see pages 6 and 7 for information on this property tax levy). However, voters within the district boundaries of one of the five non-JTED districts voted to approve the district to join a JTED in fiscal year 2018.

As shown in Table 1 on page 5, in fiscal year 2016, all but 1 of Arizona's 14 JTEDs operated with a combination of both JTED central campuses and JTED member districts' satellite campuses. The 14th JTED, which was established in fiscal year 2016, operated with only its 2 JTED member districts' satellite campuses. All 99 JTED member school districts operated satellite campuses. See Appendix B, pages b-1 through b-21, for a listing of the non-JTED school districts and the JTEDs and their member school districts and Appendix C, page c-1, for a map showing the location of the JTEDs.

Table 1
JTEDs, number of member districts, and CTE course enrollment[1]
Fiscal year 2016
(Unaudited)

Joint technical education district (JTED)	Number of member districts	Central CTE course enrollment	Satellite CTE course enrollment	Total CTE course enrollment
East Valley Institute of Technology (EVIT)	10	2,798	39,072	**41,870**
Western Maricopa Education Center (West-MEC)	10	1,174	36,705	**37,879**
Pima County Joint Technical Education District (PCJTED)	13	1,307	23,943	**25,250**
Southwest Technical Education District of Yuma (STEDY)	2	0	6,016	**6,016**
Cochise Technology District (CTD)	10	166	5,365	**5,531**
Northern Arizona Vocational Institute of Technology (NAVIT)	11	364	4,574	**4,938**
Central Arizona Valley Institute of Technology (CAVIT)	5	721	4,121	**4,842**
Western Arizona Vocational Education District (WAVE)	4	99	4,338	**4,437**
Coconino Association for Vocations, Industry and Technology (CAVIAT)	5	165	3,519	**3,684**
Northeast Arizona Technological Institute of Vocational Education (NATIVE)	8	226	3,000	**3,226**
Mountain Institute Joint Technical Education District (MIJTED)	7	577	1,650	**2,227**
Gila Institute for Technology (GIFT)	6	291	1,625	**1,916**
Valley Academy for Career and Technology Education (VACTE)	3	58	1,653	**1,711**
Cobre Valley Institute of Technology (CVIT)	5	105	1,115	**1,220**
JTED CTE course enrollment	**99**	**8,051**	**136,696**	**144,747**
Non-JTED CTE course enrollment				**8,407**
State-wide CTE course enrollment				**153,154**

[1] CTE course enrollment refers to "seats filled" rather than "students enrolled" because districts report students enrolled by CTE course to ADE. This means that one student would be counted in the CTE enrollment numbers multiple times if he/she occupies a course seat in more than one CTE course.

Source: Auditor General staff analysis of fiscal year 2016 district-reported duplicated CTE course enrollment data.

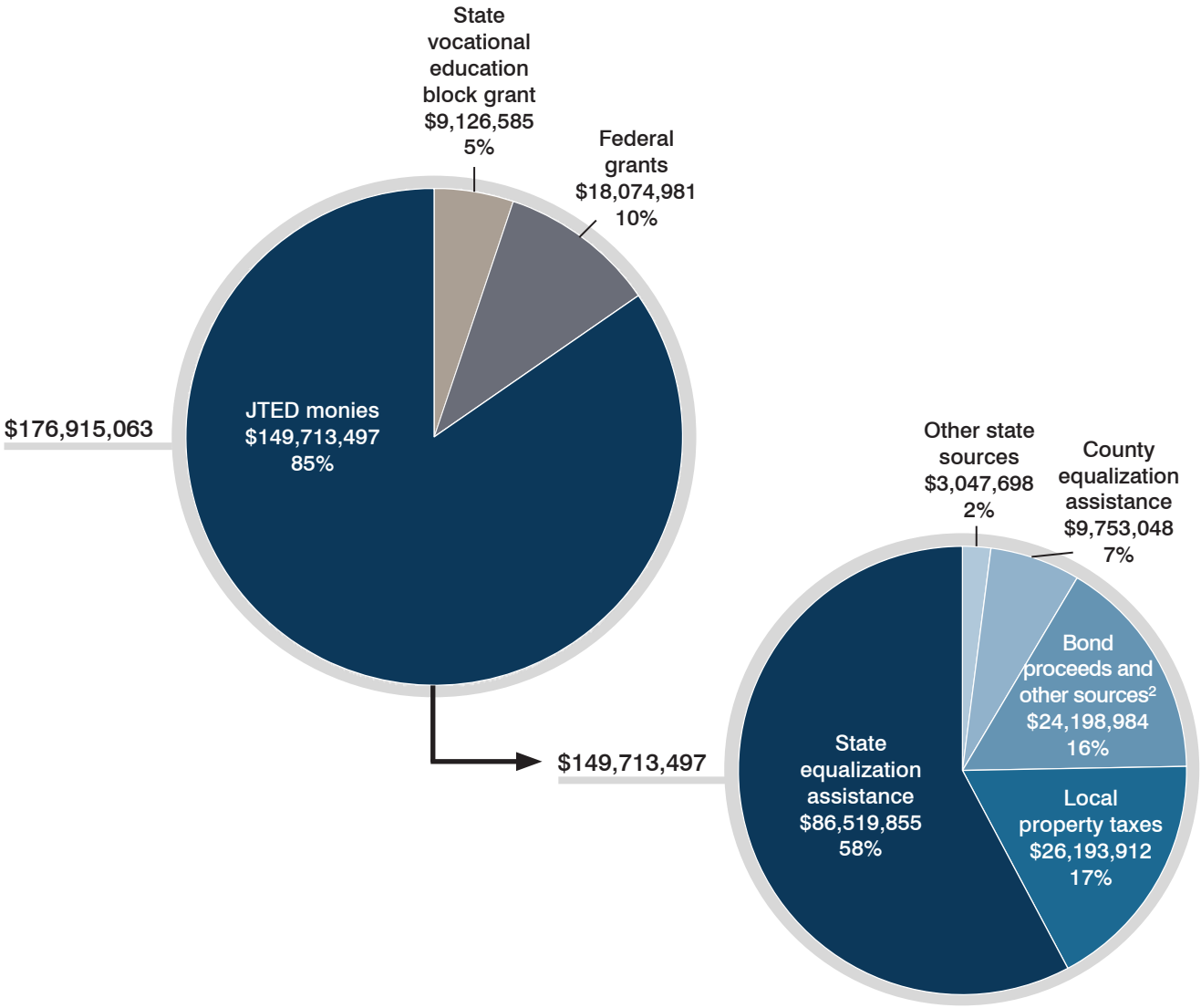
State-wide, CTE primarily funded with JTED monies

As shown in Figure 1 on page 6, in fiscal year 2016, CTE in Arizona was funded primarily with JTED monies. These monies, comprising state, local, and county revenues, primarily resulted from the additional ADM generated by the number of students attending CTE courses at JTED central campuses and their member districts' satellite campuses. Other sources of CTE funding included monies from federal sources, primarily from the Carl D. Perkins grant, and from the state vocational education block grant.[7] Although non-JTED districts are not eligible for JTED monies as discussed earlier (see page 4), they are eligible for federal Perkins grant monies and state vocational education block grant monies.

JTED monies—In fiscal year 2016, about $150 million, or 85 percent of total CTE funding, was JTED monies, which comprised state, local, and county revenues. Most of the monies, about $126 million, were generated based on the districts' central and satellite ADM and came from the following sources:

[7] The Carl D. Perkins Career and Technical Education Act of 2006 provides federal funding to states to improve secondary and postsecondary CTE programs.

Figure 1
State-wide funding sources restricted for CTE[1]
Fiscal year 2016
(Unaudited)



[1] These funding sources are required to be spent solely on CTE.

[2] Other sources include tuition from adult students, revenues from any items sold through a CTE program, and interest on investments.

Source: Auditor General staff analysis of fiscal year 2016 district-reported accounting data.

- **State equalization assistance—**About $87 million of JTED monies were from state equalization assistance, which are monies provided by State General Fund appropriations that school districts receive when their base funding needs exceed their required minimum local property tax levy. Specifically, conventional public school districts receive state equalization assistance when they levy at least a minimum local property tax rate, called the Qualifying Tax Rate (QTR), but do not generate enough revenue from that local property tax to meet their budget needs. Although conventional school districts must levy between $2.13 and $4.25 per $100 of primary assessed value before qualifying for state equalization assistance, JTEDs, which always encompass more than one school district, need levy at only a rate of no more than 5 cents per $100 of

secondary assessed value to qualify for state equalization assistance.[8] The lower QTR for JTEDs often results in a smaller percentage of JTEDs' funding coming from local property taxes when compared to the percentages at their member districts. Consequently, state equalization assistance is a larger percentage of the ADM-driven funding for JTEDs than it is for their member districts.

- **Local property taxes—**Approximately $26 million of JTED monies were from local property taxes. As stated in the previous bullet, JTEDs can levy a local property tax rate of no more than 5 cents per $100 of secondary assessed value.

- **County equalization assistance—**Nearly $10 million of JTED monies were from county equalization assistance. Arizona law requires that a portion of state equalization assistance for education be paid by the counties based on a county equalization rate set by the Legislature, which may not exceed 51.23 cents per $100 of primary assessed value.[9]

- **Other state sources—**About $3 million of JTED monies were from other state sources, primarily Classroom Site Fund monies. School districts receive Classroom Site Fund monies as a result of Proposition 301, which was approved by voters in November 2000 and increased the state-wide sales tax to provide additional resources for education programs.

The remaining $24 million of JTED monies in fiscal year 2016 were mostly from bond proceeds as well as other various sources including tuition from adult students; revenues from any items sold through a CTE program, such as food prepared in a culinary arts program; and interest on investments.[10] Similar to conventional public school districts, JTEDs may issue bonds for purposes allowed by statute, such as for building or renovating school buildings; for supplying school buildings with furniture, equipment, and technology; or for liquidating any indebtedness already incurred for such purposes.[11]

Federal grants—In fiscal year 2016, JTEDs, JTED member districts, and non-JTED districts received about $18 million, or 10 percent of total CTE funding, from federal grants. Almost all of the federal grants were from the Perkins grant. States receive Perkins grant monies from the United States Department of Education based on each state's proportional share of national population across different age groups from the prior fiscal year, with half of the funding based on the population of 15- to 19-year olds. Arizona's JTEDs, JTED member districts, and non-JTED districts then apply to ADE each year for the grant monies, which can be used only to support CTE programs and students. Additionally, districts that receive Perkins grant monies must follow certain requirements, including a comprehensive site-monitoring process ADE conducts, whereby ADE evaluates programs on eight components, such as delivering a coherent sequence of instruction and teaching all state-designated learning standards for each CTE program districts offer.

State vocational education block grant—Although JTED monies are available only to JTEDs and their member districts, the State provides other funding for CTE classes to all school districts through a state vocational education block grant. The block grant was created to help satisfy a federal requirement that in order to be eligible for federal Perkins grant monies, states must spend at least as much money on CTE each year as they spent the prior year. In fiscal year 2016, JTEDs, JTED member districts, and non-JTED districts received about $9 million, or 5 percent of total CTE funding, from the State's vocational education block grant. Under the block grant, districts submit course information to ADE for approval as CTE courses and annually provide information to ADE regarding student enrollment in CTE courses and post-graduation placements. ADE uses this information to allocate the available block grant monies to the districts, and these monies may be spent only on ADE-approved CTE programs.

---

[8] A.R.S. §15-393(F).

[9] A.R.S. §§15-971 and 41-1276. The fiscal year 2016 county equalization rate was 50.54 cents per $100 of primary assessed value. The $10 million of county equalization assistance is not included in the $87 million of state equalization assistance discussed on page 6.

[10] A.R.S. §15-393(H) allows JTEDs to enroll adult students in their central campus programs and charge a tuition. JTEDs do not receive any state funding for these adult students.

[11] A.R.S. §15-491(A)(3).

Scope

To fulfill the requirements specified by Laws 2016, Ch. 4, §7, auditors reviewed a sample of 8 CTE programs at 5 JTEDs, 13 member districts, and 3 non-JTED districts that provided CTE in fiscal year 2016. The 5 JTEDs, the 13 member districts, and the 3 non-JTED districts included in the audit sample captured 35 percent of total statewide CTE course enrollment in fiscal year 2016 and included the 3 JTEDs with the largest enrollments. See Table 6 in Appendix D, page d-2, for a listing of districts and programs sampled.

Number of JTEDs, member districts, and total CTE course enrollment increased, but statutory change resulted in fewer students being funded

Chapter 1 addresses the growth in satellite campus programs compared to JTED central campus programs. This chapter contains no recommendations.

The number of joint technical education districts (JTEDs), member districts, and total career and technical education (CTE) course enrollment have increased over the last several years, but average daily membership (ADM), the measure of student enrollment used for state funding purposes, has decreased because of a change to statute.[12] Between fiscal years 2006 and 2016, the number of JTEDs and JTED member districts increased, with most new member districts joining newly formed JTEDs. As a result, by fiscal year 2016, only five school districts that offered CTE were not JTED member districts. Between fiscal years 2011 and 2016, the period for which enrollment data was available, total state-wide CTE course enrollment grew by over 7,000 from 145,993 to 153,154.[13] Most of this growth occurred at JTED member districts' satellite campuses.[14] Although total CTE course enrollment increased, ADM decreased by about 2,000 during this time because of a statutory change that took effect in fiscal year 2012 and no longer allowed JTEDs and member districts to claim additional ADM for 9th grade students who enrolled in CTE courses.

Number of JTEDs and JTED member districts increased over last 10 years with most new member districts joining newly formed JTEDs

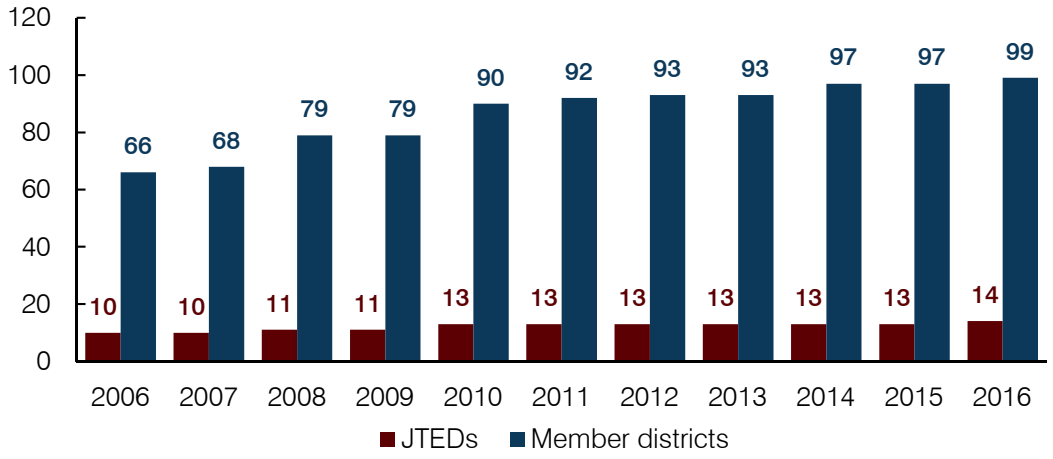
Between fiscal years 2006 and 2016, the number of JTEDs increased from 10 in fiscal year 2006 to 14 in fiscal year 2016. As shown in Figure 2 on page 10, the number of school districts that joined a JTED, and thereby became JTED member districts, also increased during this time. Specifically, the number of JTED member districts increased from 66 in fiscal year 2006 to 99 in fiscal year 2016. Twenty-six of the new member districts became part of a JTED when the voters within their district boundaries voted to establish new JTEDs, which included Pima County JTED that began operating in fiscal year 2008, Mountain Institute JTED and Western Arizona Vocational Education District that both began operating in fiscal year 2010, and Southwest Technical Education District of Yuma that began operating in fiscal year 2016. The remaining seven new member districts joined existing JTEDs. As a result of the growth in the number of JTEDs and member districts, by fiscal year 2016, only five school districts that offered CTE were not JTED member districts. The voters within the boundaries of one of these districts, Nogales Unified School District, voted to join Pima County JTED in fiscal year 2018. Appendix B lists

[12] JTED member districts are those whose voters within the district boundaries voted to approve their school districts to form a new JTED or join an existing JTED. For more details, see the Introduction, pages 2 through 4.

[13] Throughout the report, total CTE course enrollment refers to "seats filled" rather than "students enrolled" because districts report students enrolled by CTE course to the Arizona Department of Education. This means that one student would be counted in the CTE enrollment numbers multiple times if he/she occupies a course seat in more than one CTE course. Auditors used this "duplicated enrollment" number for analysis in this report because an unduplicated CTE enrollment number was not available.

[14] A JTED member district's satellite campus is a high school of the member district where the member district provides CTE to its students. For more details, see the Introduction, pages 2 through 4.

Figure 2
Number of JTEDs and member districts
Fiscal years 2006 through 2016
(Unaudited)



Source: Auditor General staff analysis of fiscal years 2006 through 2016 ADE student membership data.

each JTED with its member districts, as well as the school districts that provided CTE but were not part of a JTED (non-JTED districts) in fiscal year 2016 (see pages b-1 through b-21).

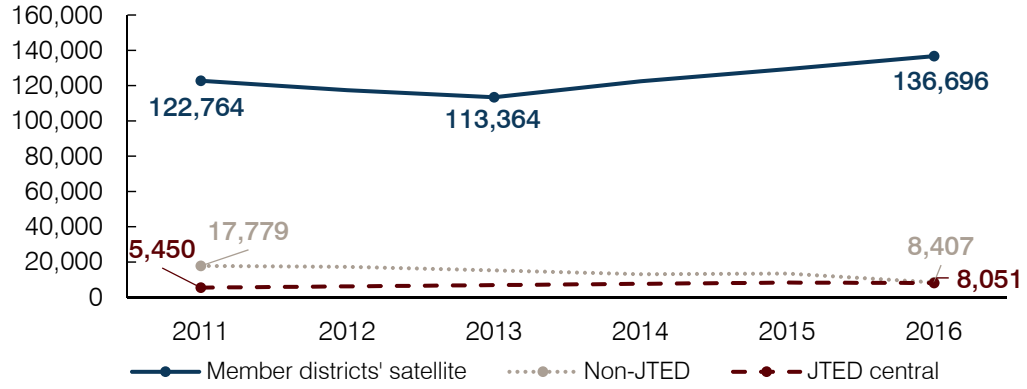
Although total CTE course enrollment increased over the last 5 years, JTED ADM decreased because of a statutory change

Between fiscal years 2011 and 2016, the period for which enrollment data was available, total state-wide CTE course enrollment increased from 145,993 to 153,154, or almost 5 percent. This increase occurred primarily at satellite campuses of JTED member districts that were part of existing JTEDs. Although total CTE course enrollment increased, ADM, the measure used for state funding purposes, decreased by about 2,000 during this time because of a statutory change that took effect in fiscal year 2012.

Total CTE course enrollment grew by over 7,000 state-wide during last 5 years, primarily at JTED member districts' satellite campuses—Between fiscal years 2011 and 2016, total state-wide CTE course enrollment increased from 145,993 to 153,154, which represents students filling 7,161, or 5 percent, more seats in CTE courses. Most of the increase resulted from CTE course enrollment increases at JTED member districts' satellite campuses. As shown in Figure 3 on page 11, CTE course enrollment at JTED member districts' satellite campuses was over 11 percent higher in fiscal year 2016 than it was in fiscal year 2011. About 75 percent of this growth was due to the seven districts that voted to join or form a JTED during this time and thereby become JTED member districts, resulting in those districts' CTE course enrollment moving from the non-JTED category to the member district category. The remaining growth was due to growth in CTE course enrollment at existing JTED member districts' satellite campuses. Although CTE course enrollment at member districts' satellite campuses grew overall during the last 5 years, there was an 8 percent decline in JTED member districts' satellite campus CTE course enrollment between fiscal years 2011 and 2013, which occurred when the State no longer allowed JTEDs and member districts to claim additional ADM for 9th grade students who enrolled in CTE courses, as further discussed in the next section.

JTED ADM decreased by almost 2,000 during last 5 years because of statutory change—Although total state-wide CTE course enrollment increased between fiscal years 2011 and 2016, total state-wide JTED ADM decreased by almost 2,000, from 26,383 in fiscal year 2011 to 24,429 in fiscal year 2016. As discussed in the Introduction (see page 3), ADM is used for funding purposes and does not represent the actual number of students participating in CTE. Rather, a student generates an additional 0.75 ADM, or "central ADM," if

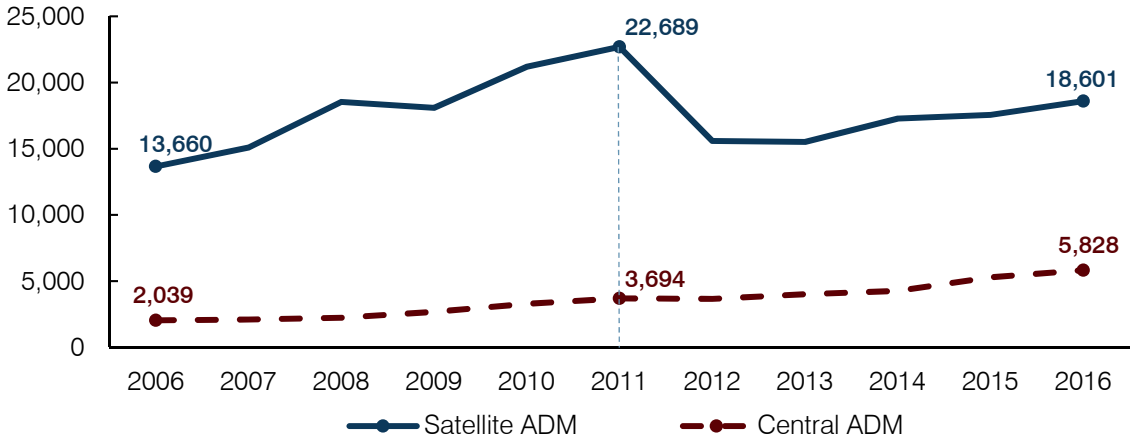
Figure 3
CTE course enrollment by CTE model
Fiscal years 2011 through 2016
(Unaudited)



Source: Auditor General staff analysis of district-reported duplicated CTE course enrollment data from fiscal years 2006 through 2016.

the student is enrolled in at least 2.5 hours of CTE courses at a JTED central campus or an additional 0.25 ADM, or "satellite ADM," if the student is enrolled in one or more CTE courses at a JTED member district's satellite campus.[15] As shown in Figure 4, although both central and satellite ADM increased between fiscal years 2006 and 2011, satellite ADM decreased by 31 percent between fiscal years 2011 and 2012. The decline in satellite ADM occurred when the State no longer allowed JTEDs to claim additional ADM for 9th grade students who enrolled in CTE beginning in fiscal year 2012.[16] Although this statutory change resulted in a large decrease in

Figure 4
JTED central and satellite ADM
Fiscal years 2006 through 2016
(Unaudited)



Source: Auditor General staff analysis of fiscal years 2006 through 2016 ADE student membership data.

[15] A JTED central campus is a location where a JTED provides CTE to students from its member districts. A JTED member district's satellite campus is a high school of the member district where the member district provides CTE to its students. For more details, see the Introduction, pages 2 through 4.

[16] Laws 2011, Ch. 29, §7, revised Arizona Revised Statutes §15-393.

satellite ADM, it had an impact of less than a 1 percent decline on central ADM. This difference likely occurred because most 9th grade students attended CTE courses at member districts' satellite campuses, while most JTED central campuses typically served only 10th through 12th grade students. In fiscal year 2011, 92.8 percent of 9th grade CTE students were enrolled at JTED member districts' satellite campuses, and 0.4 percent were enrolled at JTED central campuses.

The 31 percent decline in satellite ADM between fiscal years 2011 and 2013 was of a much larger magnitude than the 8 percent total decrease in JTED member districts' CTE course enrollment between the same years as shown in Figure 3 on page 11. This is because some JTED member districts continued to allow 9th grade students to enroll in their CTE courses even though the districts did not receive additional JTED monies for them.

JTEDs, member districts, and non-JTEDs shared similarities in CTE delivery and student outcomes, but differences existed both among and within models

Auditors found that districts delivering career and technical education (CTE) through central campus, satellite campus, and nonjoint technical education district (JTED) models shared some similarities in how they deliver CTE instruction and in their student outcomes but also found differences in other areas. Among the sample of districts reviewed, auditors identified similarities among the three models in the proportion of class time that students spent in a laboratory, field-based, or work-based environment; class sizes; and high school graduation rates. Auditors also identified differences in CTE delivery and student outcomes both among and within the three models, including differences in the total amount of time that students spent in class, type of teacher experience, available equipment, emphasis placed on students earning industry certifications, and opportunities for CTE students to earn college credits.

Chapter 2 addresses the delivery of CTE for schools that are not included in a JTED compared to the delivery of CTE in a JTED as well as the delivery of CTE at a central campus compared to the delivery of CTE at a satellite campus. This chapter contains no recommendations.

Districts deliver CTE through three different models

As discussed in the Introduction (see pages 2 through 4), districts deliver CTE through one of three models—at a JTED central campus, at a JTED member district's satellite campus, or at a school district that is not part of a JTED (non-JTED district). In the JTED central campus model, a JTED provides CTE at one or more central campuses to students from its member districts as well as to students from charter schools, private schools, or home schools located within its boundaries. Students attending JTED central campuses usually spend part of their day at the high schools they regularly attend taking academic and other elective courses and part of their day at the JTED central campus, where they take CTE courses that are typically offered daily in 2- to 3-hour blocks. JTED member districts' satellite campuses are those owned or operated by a JTED member district where the member district offers CTE courses and programs on its regular high school campus or campuses. Students attending a JTED satellite campus spend their entire school day at the member district's high school where they take CTE courses that are typically offered daily for 50 to 55 minutes each. Non-JTED districts are those that are not part of a JTED. Students generally attend CTE courses at the high schools they regularly attend, and CTE courses are typically offered daily for 50 to 55 minutes each.

To compare the delivery of CTE both among and within these three models, auditors reviewed a sample of 8 CTE programs provided at a sample of 5 JTEDs, 13 JTED member districts, and 3 non-JTED districts.[17] Auditors compared several components of CTE delivery, such as class size; total class time; the proportion of class time that students spent in a laboratory, field-based, or work-based environment; teacher experience; and available equipment. Auditors also compared available student outcome data, such as high school graduation rates and college credits earned.

[17] See Table 6 in Appendix D, page d-2, for a listing of districts and programs sampled.

CTE models shared similarities in CTE delivery and student outcomes

Among the districts auditors reviewed, there were several similarities in CTE delivery and student outcomes across the three CTE models. Specifically, regardless of model, students attending CTE programs appear to have spent the majority of fiscal year 2017 class time in a laboratory, field-based, or work-based environment as required by statute. Additionally, fiscal year 2016 average class sizes were similar across the models. Finally, in fiscal year 2016, the high school graduation rates for students who completed two or more CTE courses in a program were likely similar among the three models.

Students appear to have spent a majority of class time in a laboratory, field-based, or work-based environment—As discussed in the Introduction (see page 2), statutory changes in 2016 created new requirements for CTE courses and programs to be eligible for JTED monies.[18] Beginning in fiscal year 2017, one of the new requirements is that a majority of class time must be conducted in a laboratory, field-based, or work-based environment—a setting outside of a traditional classroom where students practice performing, often with specialized equipment, the technical skills they have studied.[19] Additionally, Laws 2016, Ch. 4, §6, requires the Arizona Department of Education (ADE) to review CTE programs' compliance with statute and eligibility for JTED monies. As of August 2017, ADE had reviewed 408 individual CTE programs—41 at JTED central campuses and 367 at member districts' satellite campuses—and determined that all of the programs reviewed complied with the requirement that students spend a majority of class time in a laboratory, field-based, or work-based environment.[20] Further, beginning in fiscal year 2017, JTEDs are required to review their member districts' satellite campus CTE programs to ensure quality and compliance with statute, which includes ensuring a majority of class time is spent in a laboratory, field-based, or work-based environment. For the five JTEDs that auditors reviewed, each JTED began reviewing their member districts' satellite campus CTE programs for compliance with this requirement in fiscal year 2017. Of the 41 member districts' satellite campus CTE programs included in the audit sample, 35 were reviewed by their JTED in fiscal year 2017, and the JTEDs determined that all 35 met this requirement.[21] Additionally, auditors visited a total of 39 CTE classrooms at JTED central campuses and member districts' satellite campuses when students were present and observed that in all but four classes, students were engaged in a laboratory, field-based, or work-based environment at the time auditors visited. Auditors' interviews with CTE teachers also indicated that students spend the majority of classroom time in a laboratory, field-based, or work-based environment. Additionally, CTE directors and JTED officials indicated that the nature of CTE is such that students must spend most of their time performing technical tasks and using equipment to become competent in their technical skills and to become career ready. CTE teachers also indicated that students take CTE courses because they want to work with their hands and that they become unsatisfied quickly if they are not getting the opportunity to practice and apply their skills.

Average class sizes were similar—Auditors reviewed fiscal year 2016 class sizes for the sampled CTE programs and districts and found that class sizes were similar among the three CTE models. Class size can be important because it may reflect the extent to which CTE teachers can provide individual attention to students in their classes. Specifically, the average class size for the sampled CTE programs at JTED central campuses was 22 students, while average class sizes at the sampled JTED member districts' satellite campuses and non-JTED districts were 24 and 22 students, respectively. However, class sizes varied by program and, in some instances, were smaller. One reason for smaller class sizes is that some programs have a maximum number of students per teacher. For example, the Arizona State Board of Nursing requires that nursing programs have a maximum of ten students per teacher while the students are demonstrating their knowledge and skills in a clinical setting.

---

[18] JTED monies are comprised of state, local, and county revenues and primarily result from the additional average daily membership generated by the number of students attending CTE courses at JTED central campuses and their member districts' satellite campuses. For more details, see the Introduction, pages 5 through 7.

[19] Laws 2016, Ch. 4, §2, revised Arizona Revised Statutes (A.R.S.) §§15-391(3)(e) and 15-391(5)(d). Non-JTED districts' CTE programs do not have to meet this requirement because they do not receive JTED monies.

[20] In fiscal year 2016, JTEDs, member districts, and non-JTEDs operated over 2,200 individual CTE programs.

[21] One JTED in the audit sample conducts reviews of its member districts' satellite campus CTE programs on a staggered schedule and reviews these programs once every 3 years. Because of this staggered schedule, six of this JTED's member districts' satellite campus CTE programs included in the audit sample were not reviewed in fiscal year 2017.

For other programs, the school districts set a maximum number of students in a class because students use equipment that could create a safety issue if not operated and supervised properly. For example, the Automotive Technologies programs at the sampled JTED central campuses, JTED member districts' satellite campuses, and non-JTED districts had average class sizes of 18 students.

Graduation rates for students who completed two or more CTE courses were likely similar— In fiscal year 2016, the high school graduation rates for students who completed two or more CTE courses in a program, commonly referred to as "concentrators," were likely similar among the three CTE models. ADE is required to calculate and report the high school graduation rate for concentrators at only those districts that received Perkins grant monies (see the Introduction, page 7, for more about this funding source).[22] In fiscal year 2016, the high school graduation rates for concentrators at JTED member districts' satellite campuses and non-JTED campuses were both 99 percent. ADE reported the high school graduation rate for concentrators at JTED central campuses for only one JTED in fiscal year 2016 because only one JTED received a significant amount of Perkins grant monies in fiscal year 2016. The high school graduation rate for concentrators at this JTED's central campuses was 98 percent. The state-wide high school graduation rate was 78 percent in fiscal year 2015 (the most recent year for available data).[23]

Differences existed in CTE delivery and student outcomes both among and within CTE models

Auditors also identified some differences in CTE delivery and student outcomes among the three models, as well as within models. Among the districts in auditors' sample, differences existed in the amount of class time students had to practice their skills, the type of experience teachers had, the quality and amount of equipment available to students, the emphasis teachers placed on students earning industry certifications as part of their CTE programs, and the opportunities for students to earn college credits through their CTE courses.

Students at JTED central campuses had more class time to practice skills—Among the districts in auditors' sample, in fiscal year 2016, students who took CTE courses at a JTED central campus had more class time to practice their skills than students who took CTE courses at a JTED member district's satellite campus or at a non-JTED district. This additional practice may allow students to further improve their skills and be more successful in earning industry certifications. Based on a review of fiscal year 2016 class schedules for the CTE programs and districts sampled, auditors determined that JTED central campuses typically offered CTE courses that met 4 to 5 days per week for 2 to 3 hours a day, whereas JTED member districts' satellite campuses and non-JTED districts typically offered CTE courses that met 5 days per week, but for only 50 to 55 minutes a day. As shown in Table 2 on page 16, this resulted in students receiving more class time per CTE course at a JTED central campus than at a JTED member district's satellite campus or at a non-JTED district's campus. For example, a student who was in a year-long Automotive Technologies course at a JTED central campus received 24,445 minutes (407 hours) of total class time, on average. In contrast, a student who was in a year-long Automotive Technologies course at a JTED member district's satellite campus or at a non-JTED district's campus received 8,882 (148 hours) or 11,600 minutes (193 hours) of total class time, respectively. Although students at member districts' satellite campuses and non-JTED districts received less class time as compared to JTED central campuses for those CTE programs at the districts sampled, they still satisfied ADE's program requirements.[24]

---

[22] The Carl D. Perkins Career and Technical Education Act of 2006 Section 113(b)(2)(A)(iv) requires ADE to calculate and report the high school graduation rate for concentrators for those districts receiving Perkins grant monies. For state reporting purposes, Laws 2016, Ch. 4, §4, created A.R.S. §15-391.01(A), which requires ADE to report the high school graduation rate for all students enrolled in CTE courses beginning in fiscal year 2017. Prior to this statute being enacted, ADE reported only the high school graduation rate for concentrators to satisfy the federal reporting requirements.

[23] Comparing concentrator high school graduation rates to overall individual school district or state-wide high school graduation rates should be done with caution because they include different groups of students. For example, if a 10th grade student takes one CTE course and then drops out of school, that student would lower the school district's and state-wide high school graduation rates but would have no impact on the high school graduation rate of concentrators at that district.

[24] ADE requires that CTE programs comprise two or three Carnegie Units, depending on the program. A Carnegie Unit represents 120 classroom hours, or 7,200 minutes, of instruction and is representative of one year's study in a subject. At some sites and for some CTE programs, students have the option of taking additional courses within a program that are not required per ADE's program sequence.

Table 2
Comparison of each model's average CTE program course minutes at sampled districts
Fiscal year 2016
(Unaudited)

	Models		
CTE program	JTED central	JTED member districts' satellite	Non-JTED
Automotive Technologies	24,445	8,882	11,600
Business Management and Administrative Services	N/A[1]	9,019	10,045
Culinary Arts	20,976	9,540	9,792
Engineering Sciences	27,360	9,248	13,680
Film and TV	27,000	9,048	11,780
Nursing Services	21,110	11,970	9,975
Plant Systems	N/A[1]	8,993	N/A[1]
Welding Technologies	27,656	9,122	N/A[1]
Sample average	**24,758**	**9,478**	**11,145**

[1] Indicates that CTE program course minutes were not applicable because the CTE program was not offered by the districts included in the audit sample during fiscal year 2016.

Source: Auditor General staff analysis of district-reported CTE course minute data from fiscal year 2016 for a sample of programs and districts. See Appendix D (page d-2) for a listing of the districts and programs sampled.

Although students attending CTE courses at JTED central campuses received more class time than their peers at JTED member districts' satellite campuses and non-JTED districts' campuses, on average, they did not necessarily receive more content instruction. Instead, based on teacher interviews, auditors' observations, and a review of course catalogs and lesson plans, it appears that the greater class time that students at JTED central campuses received allowed them more time to practice and refine their skills. Specifically, some JTED officials indicated that they believe the greater class time that their students receive allows them time to master the skills necessary to earn more industry certifications than would be possible if the students had less time to practice their skills. They said this was especially true for those programs that offer varying levels of certifications. For example, welding students can earn plate-welding certifications for different positions with increasing difficulty levels, such as a flat, horizontal, vertical, and overhead position. However, because districts are not required to collect or report the number of certifications earned by their students, auditors could not verify this claim. See Chapter 8 (pages 50 through 52) for more information and a recommendation on this topic.

CTE teachers' type of experience varied among CTE models but impact on student outcomes could not be determined—Based on auditors' interviews with 57 CTE teachers from the sampled districts, although the total years of experience the CTE teachers had was similar across the three models, the type of experience varied. Specifically, CTE teachers at JTED central campuses and JTED member districts' satellite campuses in auditors' sample reported having more industry experience, while CTE teachers at non-JTED districts reported having more teaching experience. Because not all districts in auditors' sample maintained documentation to support CTE teachers' years of teaching and industry experience, auditors had to rely on interviews with CTE teachers to gather this information. Based on these interviews, auditors determined that, in fiscal year 2017, the median years of teaching experience for the CTE teachers interviewed was 4 (JTED central campuses), 7 (JTED member districts' satellite campuses), and 13 (non-JTED campuses). The median years

of industry experience for the CTE teachers interviewed was 19 (JTED central campuses), 13 (JTED member districts' satellite campuses), and 7 (non-JTED campuses).[25]

Having more teaching or industry experience may have an impact on student outcomes, such as the rate at which CTE students who completed one CTE course in a program went on to become concentrators in the program or who earn industry certifications. However, auditors could not analyze whether the differences in types of experience have an impact on these outcomes because this student-level outcome data was not available. See Chapter 8 (pages 50 through 52) for more information and a recommendation on this topic.

Quality and amount of equipment consistent at JTED central campus programs, but varied at member districts' satellite campuses and non-JTED districts' programs—Auditors observed CTE program equipment at sampled districts and reviewed the sampled programs' CTE equipment lists and found the quality of equipment at JTED central campus programs to be more consistent than at member districts' satellite campus and non-JTED districts' programs. This was especially true for the Culinary Arts, Automotive Technologies, and Engineering Sciences programs. For example, all the Culinary Arts kitchens that auditors visited at JTED central campuses had commercial equipment, like that found in restaurants, while some kitchens at JTED member districts' satellite campuses and non-JTED districts did not. Kitchen equipment at these campuses ranged from commercial equipment similar to what auditors observed at JTED central campuses to kitchen equipment similar to that found in private residential homes and had not been updated to include commercial equipment (see Photo 1 for an example). Specifically, two of the three kitchens visited at non-JTED districts and three of the seven kitchens visited at member districts' satellite campuses did not have commercial equipment.[26] Some member district officials indicated that they have plans to update their kitchens to include commercial equipment, and Nogales USD officials indicated that they plan to use the additional JTED monies they receive from joining Pima County JTED to update their kitchens to include commercial equipment.

Photo 1
Examples of Culinary Arts program kitchens at JTED member districts' satellite campuses

Kitchen with commercial equipment

Kitchen with noncommercial equipment

Source: Photos taken by Auditor General staff on April 17, 2017.

Similarly, auditors found that the sampled JTED central campus programs generally had more equipment than the sampled member district satellite campus and non-JTED district programs. For example, auditors observed that automotive programs at JTED central campuses sampled tended to have more bays within which to work on

[25] Auditors presented the median for teachers' years of experience because the average may have been skewed by those teachers with unusually high or low number of years of experience.

[26] Auditors reviewed Culinary Arts programs at five member district satellite campuses but visited seven kitchens because two of the satellite campus programs used multiple kitchens.

vehicles, lifts to raise vehicles, and other pieces of equipment than at JTED member districts' satellite campuses and non-JTED campuses. The additional equipment allows more students access to the equipment necessary to practice their applied skills. In contrast, at JTED member districts' satellite campuses and non-JTED districts in auditors' sample, auditors observed less consistency in the amount of equipment these districts had. For example, at some JTED member districts' satellite campuses and non-JTED districts, students in automotive programs had access to the same equipment as students at JTED central campus programs, while students in other districts had access to far less equipment, including fewer bays and lifts. Further, although all the districts regardless of model had the essential equipment needed for their automotive programs, more of the JTED central campuses auditors sampled had up-to-date equipment, such as current front-end alignment machines, and additional equipment, such as specialized training machines, than the JTED member districts' satellite campuses and non-JTED districts sampled.

Across CTE models, differences existed in emphasis placed on students earning industry certifications—Consistent across the three CTE models, auditors found that the emphasis placed on CTE students earning industry certifications or licenses varied depending on the CTE program teacher. Pursuant to statute, CTE programs that are eligible for JTED monies must lead to certification or licensure, where a relevant one exists for that industry, or to career readiness for those industries where no relevant certification or license exists.[27] However, statute does not require students to earn certifications or licenses. Industry certifications and licenses are those offered by third-party organizations that certify that an individual has demonstrated proficiency in certain industry skills. Common examples of industry certifications mentioned by CTE teachers auditors interviewed include the Certified Nursing Assistant certificate administered by the Arizona State Board of Nursing and the ASE Student Certification offered by the National Institute for Automotive Service Excellence. During auditors' visits to JTED central campuses, JTED member districts' satellite campuses, and non-JTED districts, auditors found that the emphasis placed on students earning industry certifications or licenses depended on the CTE program teachers. In all three models, there were some teachers who indicated that they strongly encourage their students to earn industry certifications, while other teachers told auditors that they do not place very much emphasis on students earning certifications. Although the emphasis on students earning industry certifications varied by teacher, all five sampled JTEDs encouraged students at both central and satellite campuses to earn industry certifications by offering financial assistance for them to earn a certification, including reimbursing students for the cost of the exams or paying a portion or the full amount of the exam fees.

Auditors could not analyze whether the differences that CTE teachers placed on their students earning certifications or licenses may have resulted in differences in the rate at which students earned these credentials because districts are not required to track or report the certifications or licenses that their CTE students earn. Tracking these outcomes could provide important information to district decision makers. See Chapter 8 (pages 50 through 52) for more information and a recommendation on this topic.

CTE students attending JTED central programs at community college campuses appeared to have more opportunities to earn college credit—Some CTE programs offered at JTED central campuses, JTED member districts' satellite campuses, and non-JTED districts not only allow students to earn high school credit, but also provide them the opportunity to earn college credit at the same time, known as dual credit or concurrent credit (see textbox). Students can earn dual or concurrent credit if their JTED or district partners with a community college or university to designate a CTE course as eligible for college credit. To determine whether the CTE model impacted college credits earned, auditors interviewed CTE district officials, reviewed fiscal year 2016 intergovernmental agreements between JTEDs and community colleges, reviewed CTE course descriptions, and reviewed information from district and community college websites to determine whether students had

Dual credit—Students earn high school and college credit by attending a college-level course that is conducted on a high school or JTED campus.

Concurrent credit—Students earn high school and college credit by attending a college-level course that is conducted at a community college or university.

[27] Laws 2017, Ch. 279, §1, modified A.R.S. §15-391(5)(l) to define a JTED program as one that leads to certification or licensure, if available, or to career readiness and entry-level employment where relevant certification or licensure does not exist in that industry.

opportunities to earn dual or concurrent credit at the districts and in the programs sampled. Auditors were not able to compare the number of actual credits students earned because only some JTEDs, member districts, and non-JTED districts collected this information. See Chapter 8 (pages 50 through 52) for more information and a recommendation on this topic. In fiscal year 2016, 5 of the 5 JTEDs, 13 of the 13 member districts, and 2 of the 3 non-JTED districts reviewed offered dual or concurrent credit opportunities for at least some of their CTE programs. For the districts and programs sampled, 72 percent of the JTED central programs, 61 percent of the member districts' satellite programs, and 36 percent of the non-JTED district programs offered students opportunities to earn college credit.[28]

Additionally, as discussed in the Introduction (see page 2), some JTEDs partner with community colleges to use their facilities and teachers, and CTE students attending these JTED central programs attend classes on community college campuses. For the two JTEDs in auditors' sample where CTE students attended JTED central programs on community college campuses, all of the programs sampled provided students with the opportunity to earn college credit. For the other three JTEDs sampled, which provided CTE courses on their own campuses, half of the programs sampled provided students with the opportunity to earn college credit.[29] One of the requirements for a community college or university to designate a CTE course as eligible for dual or concurrent enrollment is that the course teacher meets the college's teaching qualifications, which typically includes having a master's degree. This may be one of the reasons that CTE students attending JTED central programs on community college campuses have more opportunities to earn college credit. In contrast, the JTEDs that operate their own campuses, the member districts, and the non-JTED districts may or may not require their CTE teachers to meet these same requirements.

[28] For the districts sampled, 13 of 18 JTED programs, 25 of 41 member district programs, and 4 of 11 non-JTED district programs offered CTE students opportunities to earn college credits in fiscal year 2016 in the programs sampled.

[29] In fiscal year 2016, 7 of 7 sampled JTED central programs located on community college campuses and 6 of 11 sampled JTED central programs located on the JTEDs' campuses offered CTE students opportunities to earn college credits.

Almost half of JTED member districts' CTE programs duplicated, but challenges limit consolidation opportunities

Career and technical education (CTE) programs offered at joint technical education district (JTED) member districts were frequently offered at multiple satellite campuses within the member districts. Additionally, CTE programs offered at JTED member districts were also frequently offered at JTED central campuses, but auditors identified several challenges that limit opportunities for districts to combine these programs.[30] State-wide, in fiscal year 2016, almost half of JTED member districts' CTE programs were "duplicated," which means they were offered at two or more satellite campuses within the same member district or at the JTED central campus to which the member district belonged. However, auditors identified several challenges that limit opportunities for districts to consolidate duplicated programs such as large course enrollments, differences in schedules, and students' lack of transportation or inadequate time in their class schedules to accommodate CTE class schedules.

Chapter 3 addresses the duplication of JTED program and course offerings. This chapter contains no recommendations.

State-wide, almost half of JTED member districts' CTE programs duplicated

In fiscal year 2016, 433 of 953 JTED member districts' CTE programs, or 45 percent, were "duplicated," which means they were offered at two or more satellite campuses within the same member district or at the JTED central campus to which the member district belonged.[31] Using fiscal year 2016 CTE course enrollment data provided by the Arizona Department of Education (ADE), auditors identified the CTE programs offered at each member district's satellite campuses. For each CTE program at a member district's satellite campus, auditors determined whether the CTE program was also offered at another satellite campus within the member district. If so, auditors considered the CTE program to be a duplicated program. Additionally, if the CTE program was offered at a JTED central campus to which the member district belonged, auditors considered the CTE program to be a duplicated program. Auditors' analysis determined that almost half of JTED member districts' fiscal year 2016 CTE programs were duplicated. Specifically, of these 433 duplicated CTE programs, 250 were offered at more than one satellite campus within a member district, and 255 were offered at a member district satellite campus and at a campus at the member district's JTED.[32]

---

[30] JTED member districts are those whose voters within the district boundaries voted to approve their school districts to form a new JTED or join an existing JTED. A JTED central campus is a location where a JTED provides CTE to students from its member districts. A JTED member district's satellite campus is a high school of the member district where students take CTE courses along with other non-CTE courses. For more details, see the Introduction, pages 2 through 4.

[31] The 953 CTE programs mentioned in this section that were offered in fiscal year 2016 refer to the total number of CTE programs offered at member districts state-wide rather than the total number of CTE programs offered at campuses state-wide. For this reason, the 953 programs offered at member districts state-wide is less than the 2,200 CTE programs mentioned in Chapter 2 and that the Arizona Department of Education reported as being offered at JTED central campuses and member districts' satellite campuses state-wide.

[32] In fiscal year 2016, 72 programs were offered at more than one satellite campus within a member district and also offered at a central campus at the member district's JTED.

Several challenges limit opportunities to consolidate duplicated programs

Auditors identified several challenges that limit opportunities for districts to consolidate duplicated CTE programs. For example, in fiscal year 2016, most CTE classes at JTED member districts had enrollments large enough that combining the classes would likely be inappropriate because classes would likely be too large upon consolidation. Additionally, having different daily and/or annual school schedules may reduce opportunities for districts to consolidate duplicated programs. Finally, some students may not be able to attend CTE programs that are not offered at their home campuses because they lack transportation or adequate travel time in their class schedules to travel to other campuses on public transportation or do not have enough time in their class schedules to attend longer class periods typically offered at JTED central campuses.

Most duplicated CTE programs had enrollment large enough that combining them would result in above average class sizes—For those CTE programs with sufficiently large course enrollments, it may not be appropriate to combine students from multiple campuses into a single program because of class size considerations. Of the 250 duplicated CTE programs offered at more than one satellite campus within a member district, 237, or 95 percent, had large enough enrollments that they likely could not be combined with the same program at other satellite campuses within the member district. For these 237 duplicated programs, their courses' average class sizes were sufficiently large that no other classes for the same courses could be combined with them without creating class sizes that were larger than the average class size state-wide for the courses. Auditors used the state-wide average class sizes for courses in a CTE program as the class sizes deemed most appropriate by districts providing CTE instruction. Auditors could not evaluate the opportunities that member districts and JTEDs had to combine those CTE programs that were offered at both a member district satellite campus and at a central campus at the member district's JTED because in fiscal year 2016 JTED enrollment data for CTE programs was not reported at the level of each JTED central campus.[33]

Different school schedules may reduce opportunities for combining CTE programs—Another challenge that may make it difficult for districts to consolidate duplicated CTE programs is that member districts often have different daily and annual schedules than the JTED central campuses that serve them. For example, districts often start and end on different days and at different times, have different vacation breaks and standardized testing schedules, have different bell schedules, or may or may not have half-days where students are released early. If these schedules do not align, it may be inconvenient for a student to attend a CTE course at a JTED central campus if the satellite program at his/her home school was eliminated. Additionally, district officials at one JTED indicated that having multiple member districts with different standardized testing schedules results in some students missing class time at the JTED central campus while they are taking their standardized tests because the JTED cannot stop classes to accommodate the different schedules. In fiscal year 2016, the number of member districts that each JTED served ranged from 2 to 13. Districts' willingness to revise their daily and annual schedules to align with other districts' within their JTED or with the JTED's schedule may impact their ability to consolidate their duplicated programs.

Transportation and class schedule constraints may limit opportunities for students to attend CTE classes at other campuses—Students' lack of transportation or lack of time in their class schedules may also limit opportunities for districts to consolidate their CTE programs with programs at other schools or districts. Specifically, in fiscal year 2016, 6 of 13 member districts auditors reviewed did not provide school bus transportation for their students to attend CTE classes at JTED central campuses, although 3 of the 13 member districts provided students with bus passes (see Chapter 6, page 38, for more information on this topic). If students lack their own personal transportation or cannot travel to a JTED central campus in a timely manner using public transportation, they would not be able to attend CTE classes at JTED central campuses. Additionally, as previously discussed in Chapter 2 (see page 15), JTED central campuses typically offered CTE courses that met 4 to 5 days per week for 2 to 3 hours per day. Some students may not be able to attend CTE classes at JTED central campuses because they lack the necessary two or three 50- to 55-minute periods in their class schedules

[33] JTEDs that did not receive Perkins grant funding were not required to report to ADE their CTE enrollments by campus. In fiscal year 2016, only one JTED reported its campus level enrollment to ADE.

that they would require to attend these CTE classes. For these students, attending CTE classes at their home schools may be their only option to participate in CTE.

CTE program offerings and content impacted by CTE model, location, and industry standards

Chapter 4 addresses the variety and scope of JTED program and course offerings. This chapter contains no recommendations.

The career and technical education (CTE) programs and their content that districts offered were impacted by CTE model, location, and industry standards. Specifically, auditors found that in fiscal year 2016, the model used to deliver CTE—that is whether CTE was delivered at a joint technical education district (JTED) central campus, a member districts' satellite campus, or a non-JTED campus—impacted which programs districts offered students.[34] Further, campus locations impacted the number and type of CTE programs offered. Additionally, among the districts and CTE programs auditors sampled, CTE programs with greater regulatory oversight or clear industry certifications or licenses tended to be more consistent in terms of the programs' content.

CTE model and campus locations impacted which CTE programs and how many were offered

State-wide, in fiscal year 2016, the model used to deliver CTE impacted which programs districts offered students. Further, the location of a JTED or member district in an urban or rural area impacted the number and type of CTE program choices available to students.

Of the 22 CTE programs most frequently offered at JTED central campuses in fiscal year 2016, the following 11 were not commonly offered at member districts' satellite campuses:

- Cosmetology and Related Personal Grooming Services
- Diesel Engine Repair
- Emergency Medical Services
- Fire Service
- Heating, Ventilation and Air Conditioning
- Industrial Electrician
- Medical Assisting Services
- Network Technologies
- Pharmacy Support Services
- Precision Machining
- Veterinary Assistant

Source: Auditor General staff analysis of fiscal year 2016 district-reported duplicated CTE course enrollment data.

CTE model impacted which CTE programs were offered to students—Auditors found state-wide, in some cases, which CTE programs were offered to students depended on CTE model. Specifically, auditors reviewed fiscal year 2016 CTE course enrollment data provided by the Arizona Department of Education (ADE) for all JTED central campuses and member districts' satellite campuses and found that 11 of the 22 CTE programs most frequently offered at JTED central campuses were programs not commonly offered at member districts' satellite campuses (see textbox). For example, JTED central campuses more frequently offered Cosmetology and Related Personal Grooming

[34] CTE is delivered through one of three models—at a JTED central campus, at a JTED member district's satellite campus, or at a school district that is not part of a JTED (non-JTED district). JTED member districts are those whose voters within the district boundaries voted to approve their school districts to form a new JTED or join an existing JTED. A JTED central campus is a location where a JTED provides CTE to students from its member districts. A JTED member district's satellite campus is a high school of the member district where the member district provides CTE to its students. For more details, see the Introduction, pages 2 through 4.

Services, Fire Service, and Medical Assisting Services programs, which were some of the programs generally not offered at member districts' satellite campuses. In fiscal year 2016, ten JTEDs offered a cosmetology program, while only one member district and one non-JTED district offered it. Some JTED and member district officials indicated that these programs, which are costly, require economies of scale that JTED central campuses can more easily benefit from than member districts' satellite campuses. Districts benefit from economies of scale when equipment costs are spread over larger student populations. For example, cosmetology programs are expensive because of the specialized equipment required for each student and the large space requirements, and satellite campuses at member districts often do not have enough students to support the investment in a cosmetology program. In contrast, most JTED central campuses can afford to offer cosmetology programs because they benefit from the economies of scale that result from being able to enroll students from across all of its member districts, as well as from charter, private, and home schools, thus obtaining the enrollment necessary to support the costs of this program.

Conversely, auditors' review found that state-wide, member districts frequently offered several programs, including Business Management and Administrative Services (BMAS), Digital Photography, Film and TV, Sports Medicine and Rehabilitation Services, and Technical Theatre at their satellite campuses, which were among the least offered CTE programs at JTED central campuses. Some JTED and member district officials noted that BMAS and similar programs are more easily offered at the member districts' satellite campuses because they are low cost and not as dependent on having a certain number of students to warrant the cost and investment to start the program. Additionally, these same district officials added that some programs, such as Technical Theatre, are more likely to be offered at member districts' satellite campuses than JTED central campuses because satellite campuses offer non-CTE activities like school theater productions that provide practical opportunities for students in the Technical Theatre program to design and construct sets.

Campus locations impacted the number and type of CTE programs offered—Auditors' review found that state-wide, in fiscal year 2016, the four JTEDs in urban areas generally offered a wider variety of programs at their central campuses than the rural JTEDs. Specifically, urban JTEDs offered 20 different CTE programs at their central campuses, on average, whereas rural JTEDs offered 9 different CTE programs at their central campuses, on average. This was likely due to rural JTEDs not having enough students to justify providing additional programs at their central campuses. In fiscal year 2016, on average, rural JTEDs had one central campus program for every 27 enrolled students, while urban JTEDs had one central campus program for every 67 enrolled students. With more available programs, urban JTEDs frequently offered Precision Machining, Emergency Medical Services, and Veterinary Assistant programs at their central campuses, which rural JTEDs did not generally offer. However, the programs rural JTEDs most commonly offered, such as Nursing Services, Cosmetology and Related Personal Grooming Services, and Fire Service, were also offered by urban JTEDs. State-wide, the greatest difference in program offerings was in the Precision Machining program, which was offered by all urban JTEDs but only one rural JTED. The differences in program offerings may reflect student interest in rural and urban areas, industry needs in those areas, or, if the JTED partners with a community college to offer its programs, the community college may decide which programs to offer.

Similarly, auditors' review found that across the State, on average, JTED member districts in urban areas offered more CTE program choices at their satellite campuses than rural member districts. Specifically, urban member districts offered nine different CTE programs at their satellite campuses, on average, whereas rural member districts offered six CTE programs, on average. Some of the additional CTE programs urban member districts offered at their satellite campuses included Bioscience, Digital Communications, and Professional Sales and Marketing programs, which rural member districts did not generally offer. Conversely, rural member districts frequently offered the Animal Systems program, which urban member districts did not generally offer. State-wide, the greatest difference in program offerings at satellite campuses was in the Engineering Sciences program, which was offered at 75 percent of urban member districts but at only 12 percent of rural member districts.

CTE program content most consistent among CTE programs with regulatory oversight or clear industry certifications or licenses

Based on auditors' observations, review of CTE program descriptions, and curriculum used by teachers for the CTE programs and districts auditors sampled, those CTE programs that had regulatory oversight by a state licensing board or industry certifications or licenses that are widely accepted by industry had the most consistent program content. In contrast, auditors observed the greatest amount of variance in program content among those programs that did not have regulatory oversight by a state licensing board or clearly identified industry certifications or licenses widely accepted by the industry.

Of the eight CTE programs auditors reviewed, the Nursing Services, Automotive Technologies, and Welding Technologies programs had the most consistent content.[35] Specifically:

- **Nursing Services—**Each of the nine Nursing Services programs that auditors reviewed based their curriculum on the Arizona State Board of Nursing's (Board) required standards, which prescribe the breadth and depth of material that Arizona CTE Nursing Services programs should cover. For students to earn any of the certifications or licenses the Board issues, the Nursing Services programs they complete must be approved by the Board, which reviews these programs at least every 2 years to ensure program compliance with standards. The Nursing Services programs that auditors reviewed at JTED central campuses, JTED member districts' satellite campuses, and non-JTED districts were uniform in scope of material covered. This was likely to help ensure compliance with board standards. By complying with these standards, students completing the Nursing Services program were qualified to take the Board's licensing exams, which are required to become employed as a certified nursing assistant or licensed nursing assistant in the nursing services field.

- **Automotive Technologies and Welding Technologies—**The program material covered in both the 12 Automotive Technologies and 9 Welding Technologies programs auditors reviewed were also consistent between JTED central campuses, JTED member districts' satellite campuses, and non-JTED districts. This is likely because both the automotive and welding industries have clear certifications based on industry-accepted standards. In automotive repair, it is the National Institute for Automotive Service Excellence (ASE) certifications, and in welding, it is generally the American Welding Society's (AWS) certifications. These certifications are important for students to possess to gain employment in these industries. Additionally, the AWS and a partner organization of the ASE produce standards for the training of entry level professionals in these industries. Several of the automotive and welding teachers auditors interviewed indicated that they use these standards in developing their lessons or use curriculum based on these standards, which is likely why the content of these CTE programs was consistent between the models.

Conversely, auditors observed the least amount of content consistency in the following CTE programs:

- **Film and TV—**Some of the ten Film and TV programs that auditors reviewed focused primarily on students creating and editing films, such as short films and commercials. In contrast, other Film and TV programs reviewed appeared to primarily focus on television broadcasting, such as producing morning announcements at the high schools.

- **Plant Systems—**Although each of the five Plant Systems programs that auditors reviewed included content common to the other programs, such as plant science and aquaculture, each program branched into content areas not commonly shared by the other programs, such as entomology, disease control, water quality, masonry, and turf maintenance.

Although these CTE programs' content is not consistent across JTED central campuses, member districts' satellite campuses, and non-JTED district campuses, these programs appeared to cover the technical skills standards

[35] Auditors reviewed a sample of 8 CTE programs at 5 JTEDs, 13 member districts, and 3 school districts that were not part of a JTED (non-JTED) in fiscal year 2016. Programs reviewed include Automotive Technologies, Business Management and Administrative Services, Culinary Arts, Engineering Sciences, Film and TV, Nursing Services, Plant Systems, and Welding Technologies. See Table 6 in Appendix D, page d-2, for more information.

required by the Arizona Department of Education (ADE). For example, regardless of a Film and TV program's focus, the programs auditors reviewed appeared to cover the ADE-required technical skills standards for Film and TV programs, such as creating a production outline, storyboard, and script or utilizing camera techniques for production. Additionally, in the absence of widely accepted industry certifications or licenses associated with these CTE programs, some teachers provided course content that enabled students to become familiar with industry-related software or to earn various certifications or licenses applicable to the field of study. For example, in the Film and TV programs reviewed, some teachers prepared their students to earn an Apple Final Cut Pro video editing software certification, while others prepared their students to earn various Adobe software certifications. Similarly, in the Plant Systems programs reviewed, some teachers prepared their students to earn the Occupational Safety Health Administration (OSHA)-10 certification, intended to provide general awareness on recognizing and preventing hazards on a construction site, while others prepared their students to earn the Arizona Landscape Contractors Association certification or a tractor safety license.

Nearly half of state-wide CTE spending for CTE teacher salaries and benefits, but spending among JTEDs varied due to developmental and operational differences

Chapter 5 addresses the spending habits and administrative spending of JTEDs. Auditors also included information on CTE spending state-wide. This chapter contains no recommendations.

Nearly half of fiscal year 2016 state-wide career and technical education (CTE) spending by joint technical education districts (JTEDs), JTED member districts, and non-JTED districts was for CTE teachers' salaries and benefits, but spending among the JTEDs differed due to developmental and operational differences.[36] Specifically, in fiscal year 2016, CTE spending by all three CTE models totaled about $219 million, nearly half of which was for CTE teachers' salaries and benefits. More than half of the total state-wide CTE spending came from JTED monies, which comprise state, local, and county revenues and primarily resulted from the additional average daily membership generated for students who take CTE courses at JTED central campuses or at JTED member districts' satellite campuses.[37] In addition to analyzing state-wide spending on CTE, auditors also reviewed how JTEDs spent their monies and found that during fiscal years 2012 through 2016, JTEDs reported spending the most on instruction and construction. However, spending varied among the 14 JTEDs because of key developmental and operational differences.

Nearly half of state-wide CTE spending for CTE teacher salaries and benefits

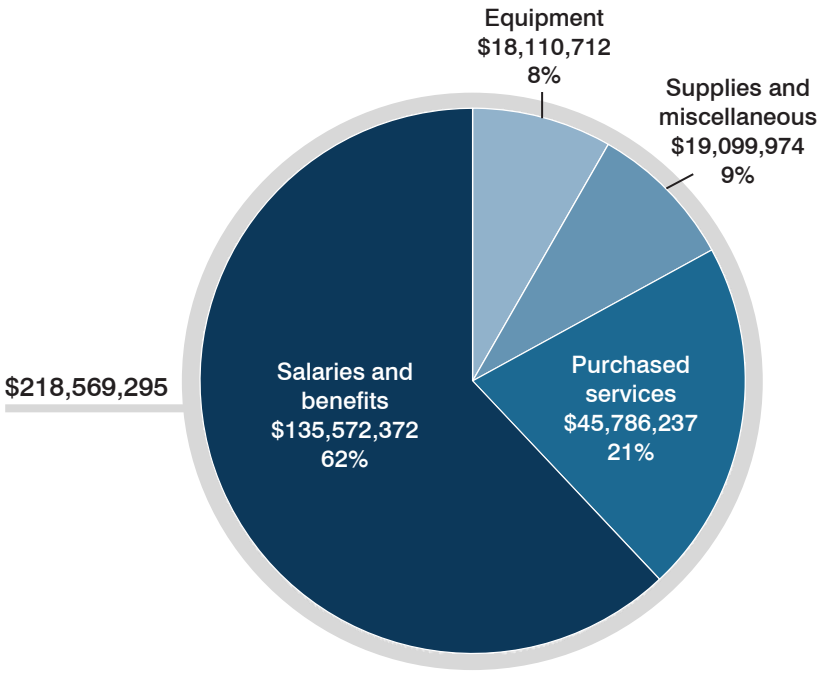
As shown in Figure 5 on page 30, fiscal year 2016 state-wide CTE spending by JTEDs, JTED member districts, and non-JTED districts totaled approximately $219 million. Districts spent about $136 million, or 62 percent of total state-wide CTE spending, for salaries and benefits of CTE teachers, CTE directors, and other staff the districts employed to help operate their CTE programs. Most of this spending, about $99 million, was for CTE teachers. Districts spent about $46 million, or 21 percent of total state-wide CTE spending, on purchased services. This area included tuition payments some JTEDs made to community colleges that provided teachers, facilities, and equipment for the JTEDs' central campus CTE programs, as well as districts' payments for other services, such as construction, instructional and curriculum development consulting, and lobbying. Districts spent about $19 million, or 9 percent of total state-wide CTE spending, on CTE-related supplies, which are those consumable or disposable items, such as sheet metal and latex gloves, used for CTE instruction, as well as textbooks and instructional software. Lastly, districts spent about $18 million, or 8 percent of total state-wide CTE spending, on equipment, such as welding machines and digital cameras.

---

[36] CTE is delivered through one of three models—at a JTED central campus, at a JTED member district's satellite campus, or at a school district that is not part of a JTED (non-JTED district). JTED member districts are those whose voters within the district boundaries voted to approve their school districts to form a new JTED or join an existing JTED. A JTED central campus is a location where a JTED provides CTE to students from its member districts. A JTED member district's satellite campus is a high school of the member district where the member district provides CTE to its students. For more details, see the Introduction, pages 2 through 4.

[37] See the Introduction, pages 5 through 7, for more information about this funding source.

Figure 5
State-wide total CTE spending by category[1]
Fiscal year 2016
(Unaudited)



[1] Figure 1 on page 6 shows the monies by funding sources restricted for CTE, while this figure includes spending from additional funding sources that districts used for CTE but that are not restricted for CTE.

Source: Auditor General staff analysis of fiscal year 2016 district-reported accounting data.

Majority of state-wide CTE spending came from JTED monies

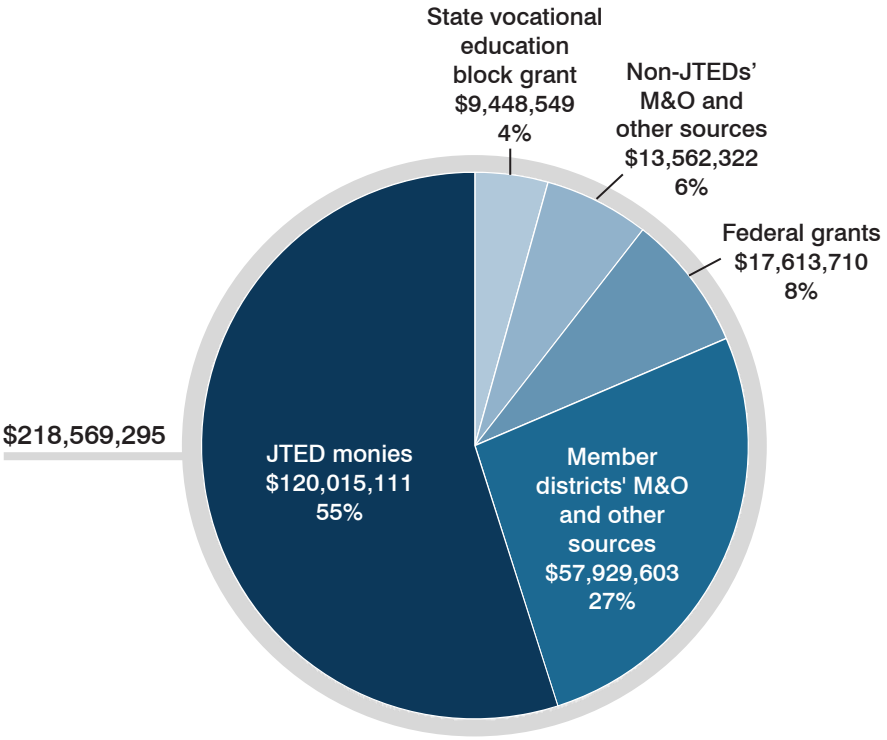
As discussed in the Introduction (see pages 5 through 7), CTE in Arizona was funded almost $177 million from three sources in fiscal year 2016—JTED monies, federal grants, and the state vocational education block grant. As shown in Figure 6 on page 31, in fiscal year 2016, districts spent $147 million from these three funding sources, which are specifically intended for CTE, as well as $72 million from other funding sources. Specifically:

- **JTED monies—**About $120 million, or over half of total state-wide CTE spending in fiscal year 2016, came from the nearly $150 million of JTED monies, which comprise state, local, and county revenues.[38] These monies primarily resulted from the additional 0.75 average daily membership (ADM) generated by the number of students attending CTE courses at JTED central campuses (central ADM) and the additional 0.25 ADM generated by the number of students attending CTE courses at member districts' satellite campuses (satellite ADM). JTEDs allocated a portion of those revenues generated by satellite ADM to member districts to spend on their CTE programs. In fiscal year 2016, JTEDs allocated about $55 million of these monies to member districts.

- **Member districts' maintenance and operation (M&O) and other sources—**Nearly $58 million, or 27 percent of total state-wide CTE spending in fiscal year 2016, came from member districts' M&O and other

[38] Districts are allowed to carry forward unspent monies to be used in future years. JTED officials have indicated that they plan for large purchases, such as adding new facilities, updating a Culinary Arts program kitchen, or starting a new program, by accumulating monies over multiple years.

Figure 6
State-wide total CTE spending from funding sources[1]
Fiscal year 2016
(Unaudited)



[1] Figure 1 on page 6 shows the monies by funding sources restricted for CTE, while this figure includes spending from additional funding sources that districts used for CTE but that are not restricted for CTE.

Source: Auditor General staff analysis of fiscal year 2016 district-reported accounting data.

funds.[39] These monies primarily include state and county equalization assistance and local property tax revenues based on a districts' non-JTED ADM and can be used for any allowable district purpose, including CTE. None of this funding was the result of the additional ADM generated by the number of students attending JTED courses at member districts' satellite campuses.

- **Federal grants—**About $18 million, or 8 percent of CTE spending in fiscal year 2016, came from federal grants, almost all of which was from the Carl D. Perkins grant. The Perkins grant provides federal funding to states to improve secondary and postsecondary CTE programs.
- **Non-JTED districts' M&O and other sources—**In fiscal year 2016, about $14 million, or 6 percent of CTE spending, came from monies that non-JTED districts spent from their M&O and other funds. Unlike JTEDs and JTED member districts, non-JTED districts do not receive any additional ADM above 1.0 for students who take CTE courses at their schools.
- **State vocational education block grant—**About $9 million, or 4 percent of CTE spending in fiscal year 2016, came from state vocational education block grant funding.

[39] Arizona Revised Statutes §15-393(D)(7) requires school districts to use JTED monies to supplement, not supplant, monies from other sources that were spent on CTE prior to joining a JTED and receiving JTED monies. That is, school districts are to use JTED monies to add to, rather than replace, monies from other sources spent on CTE.

JTED expenditures primarily for instruction and construction during last 5 years, but spending among JTEDs varied due to developmental and operational differences

In addition to analyzing state-wide spending on CTE, auditors also reviewed JTEDs' spending from JTED monies on key functional areas for fiscal years 2012 through 2016.[40] This spending includes expenditures for JTED central and satellite programs, including expenditures by member districts from their allocations of JTED monies. Analysis of JTED expenditures over a 5-year period is more informative because these expenditures can vary significantly from year to year depending on whether a JTED builds a new campus or makes substantial investments in new equipment. With only 14 JTEDs in the State, large year-to-year shifts in JTED spending habits in only a few JTEDs could also significantly impact state-wide JTED functional spending averages. Based on auditors' analysis of JTED spending for fiscal years 2012 through 2016, the 14 JTEDs spent about $580 million in total, or about $117 million annually, on average.[41] The majority of JTED expenditures were for instruction and construction, but high spending variances existed among JTEDs because of key developmental and operational differences.

JTED expenditures primarily for instruction and construction during last 5 years—As shown in Figure 7 on page 33, during fiscal years 2012 through 2016, JTEDs spent about $117 million annually, on average. This spending was in the following functional areas:

- **Instruction—**Approximately $55 million, or 47 percent of JTEDs' average annual expenditures, were for instruction, but this varied each year between 43 and 50 percent during this time period. As defined in the Uniform Chart of Accounts for Arizona School Districts (Chart of Accounts), instruction includes, among other things, salaries and benefits for teachers, tuition payments to community colleges, and instructional supplies and equipment used in CTE classrooms.

- **Construction—**Approximately $24 million, or 20 percent of JTEDs' average annual expenditures, were for construction, but this varied each year between 14 and 30 percent during this time period. As defined in the Chart of Accounts, construction includes the costs to acquire land, construct buildings, and remodel existing facilities. For example, during fiscal years 2012 through 2016, Western Maricopa Education Center (West-MEC) built three new central campuses, primarily with bond proceeds, which accounted for almost all of the JTEDs' construction spending during this time period.

- **Administration—**Approximately $14 million, or 12 percent of JTEDs' average annual expenditures, were for administration, but this varied each year between 10 and 14 percent during this time period. As defined in the Chart of Accounts, administration includes salaries and benefits for superintendents, principals, business managers, and other staff who perform business duties, such as payroll and accounts payable, district-wide information technology, and general administrative duties. These costs also include purchased services supporting the districts' administrative function, such as consulting and lobbying services.

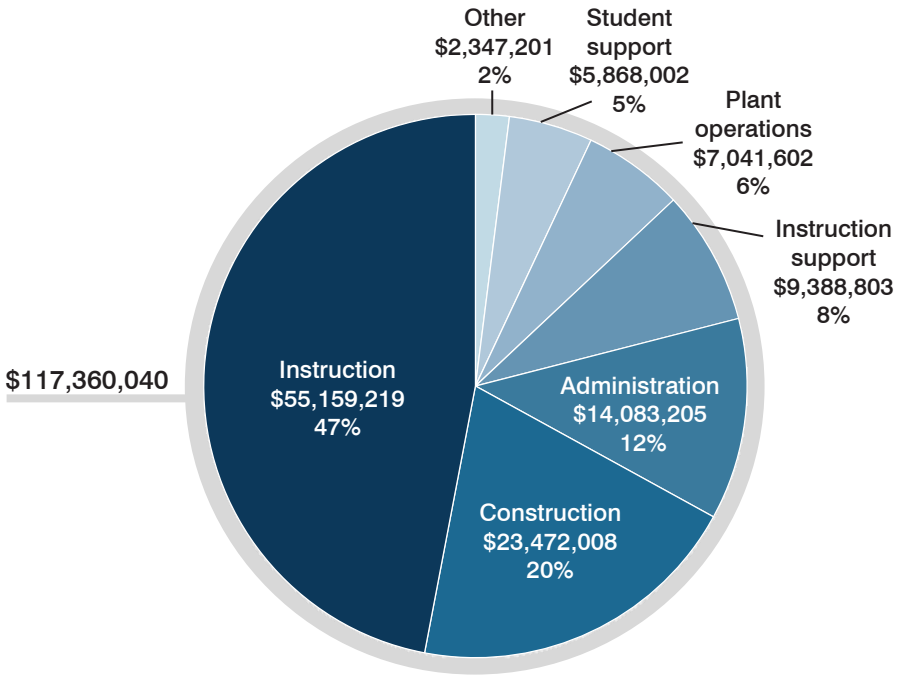
- **Instruction support—**Approximately $9 million, or 8 percent of JTEDs' average annual expenditures, were for instruction support, but this varied each year between 7 and 10 percent during this time period. As defined in the Chart of Accounts, instruction support includes salaries and benefits for curriculum directors, teacher trainings, and instruction-related technology services.

- **Plant operations—**Approximately $7 million, or 6 percent of JTEDs' average annual expenditures, were for plant operations, but this varied each year between 5 and 6 percent during this time period. As defined in

[40] Districts are required to report expenditures as prescribed in the Uniform Chart of Accounts for Arizona School Districts, which requires districts to assign all expenditures to a functional area that describes the activity for which a service or material is acquired. The Uniform Chart of Accounts for Arizona School Districts, which is based on the federal chart of accounts developed by the U.S. Department of Education's National Center for Education Statistics and intended to provide uniformity in states' reporting of educational expenditures, defines each of these functional areas and includes, among others, instruction, student support, instruction support, administration, plant operations, and construction.

[41] The Southwest Technical Education District of Yuma (STEDY) did not begin operating until fiscal year 2016 and was the only JTED that did not operate in all 5 years during fiscal years 2012 through 2016. As such, the expenditures for STEDY used for analysis in this report reflect spending from one fiscal year and do not reflect average annual spending from fiscal years 2012 through 2016.

Figure 7
5-year average of total JTED spending by functional area[1, 2]
Fiscal years 2012 through 2016
(Unaudited)



[1] JTED spending percentages by functional area as shown in this figure are not comparable to regular school districts' or state-wide spending percentages by functional area as reported in the Office of the Auditor General's annual report, *Arizona School District Spending*, because this figure includes construction and other costs that are not included in the functional percentages presented in that report. Additionally, unlike most regular school districts, JTEDs do not have food service or transportation programs, which also impact these spending percentages.

[2] JTED spending as shown in this figure includes expenditures for JTED central and satellite programs, including expenditures by member districts from their allocations of JTED monies. It does not include other CTE expenditures by member districts from their M&O and other funds, federal grants, or state vocational education block grant funding and does not include any CTE expenditures by non-JTED districts.

Source: Auditor General staff analysis of fiscal years 2012 through 2016 district-reported accounting data.

the Chart of Accounts, plant operations costs cover the costs of operating districts' facilities and include the salaries and benefits of maintenance and custodial employees and those who oversee facilities; costs for electricity, water, and other utilities; and costs for services to repair and maintain district facilities.

- **Student support and other functions—**Approximately $8 million, or 7 percent of JTEDs' average annual expenditures, were for student support services and other services, but this varied each year between 6 and 8 percent during this time period. As defined in the Chart of Accounts, these costs include salaries and benefits of counselors, interest payments on long-term debt, and capital lease payments.

JTEDs spent very differently because of key developmental and operational differences— As shown in Table 3 on page 34, during fiscal years 2012 through 2016, JTED spending in various functional areas was very different due to key developmental and operational differences. For example, one JTED reported spending 30 percent of its total spending during fiscal years 2012 through 2016 on instruction, while another JTED reported spending 69 percent on instruction. Similarly, reported JTED spending on administration varied from 8 to 30 percent. Large JTED spending variances can also be seen in other functional areas as well.

Much of the spending variance among JTEDs likely reflects key developmental differences among them. For example, during fiscal years 2012 through 2016, West-MEC, which spent the largest percentage of its monies on construction, built three new central campuses during this time. Similarly, Central Arizona Valley Institute of

Table 3
JTED 5-year total average spending and percentages by functional areas[1, 2]
Fiscal years 2012 through 2016
(Unaudited)

Joint technical education district (JTED)	Total average spending	Instruction	Construction	Administration	Instruction support	Plant operations	Student support	Other
Western Maricopa Education Center (West-MEC)	$37,605,700	30%	46%	8%	8%	3%	4%	1%
East Valley Institute of Technology (EVIT)	35,263,130	58	9	12	5	10	5	1
Pima County Joint Technical Education District (PCJTED)	16,526,612	47	4	19	16	5	4	5
Central Arizona Valley Institute of Technology (CAVIT)	4,316,529	45	24	13	8	6	2	2
Northern Arizona Vocational Institute of Technology (NAVIT)	4,287,339	69	1	10	7	3	9	1
Northeast Arizona Technological Institute of Vocational Education (NATIVE)	3,224,616	42	23	17	5	3	8	2
Western Arizona Vocational Education District (WAVE)	2,824,074	53	16	15	8	1	5	2
Coconino Association for Vocations, Industry and Technology (CAVIAT)	2,553,474	61	6	13	3	1	15	1
Cochise Technology District (CTD)	2,397,408	69	2	18	5	1	5	0
Mountain Institute Joint Technical Education District (MIJTED)	2,223,574	39	7	28	10	9	6	1
Southwest Technical Education District of Yuma (STEDY)[3]	1,945,087	58	0	17	19	1	3	2
Gila Institute for Technology (GIFT)	1,704,101	62	1	23	6	1	5	2
Valley Academy for Career and Technology Education (VACTE)	1,470,963	49	1	29	14	5	2	0
Cobre Valley Institute of Technology (CVIT)	1,017,433	43	1	30	20	1	2	3
State-wide total and averages	**$117,360,040**	**47%**	**20%**	**12%**	**8%**	**6%**	**5%**	**2%**

[1] JTED spending percentages by functional area as shown in this table are not comparable to regular school districts' or state-wide spending percentages by functional area as reported in the Office of the Auditor General's annual report, *Arizona School District Spending*, because this table includes construction and other costs that are not included in the functional percentages presented in that report. Additionally, unlike most regular school districts, JTEDs do not have food service or transportation programs, which also impact these spending percentages.

[2] JTED spending as shown in this table includes expenditures for JTED central and satellite programs, including expenditures by member districts from their allocations of JTED monies. It does not include other CTE expenditures by member districts from their M&O and other funds, federal grants, or state vocational education block grant funding and does not include any CTE expenditures by non-JTED districts.

[3] STEDY did not begin operating until fiscal year 2016 and was the only JTED that did not operate in all 5 years during fiscal years 2012 through 2016. As such, the expenditures for STEDY shown in this table reflect spending from one fiscal year and do not reflect average annual spending from fiscal years 2012 through 2016.

Source: Auditor General staff analysis of fiscal years 2012 to 2016 JTED district-reported accounting data.

Technology (CAVIT), Northeast Arizona Technological Institute of Vocational Education (NATIVE), and Western Arizona Vocational Education District (WAVE), the three other JTEDs with high percentages spent on construction, added additional buildings or completed renovations to their central and satellite campuses during this time. As a result, 16 to 46 percent of these JTEDs' spending was on construction costs during this time period, compared to the 0 to 9 percent that other JTEDs spent that have not added any new campuses or made any substantial additions to existing campuses. Further, although Southwest Technical Education District of Yuma (STEDY) did not begin operating until fiscal year 2016 and did not begin operating central CTE programs until fiscal year 2017, it did not incur any construction costs in fiscal year 2016 because it partnered with the Western Arizona Community College to offer its central CTE programs, which already had the established space to operate STEDY's programs.

Some of the spending variance among JTEDs also likely reflects certain operational differences among them that lead to JTEDs reporting costs differently. For example, during fiscal years 2012 through 2016, EVIT provided almost all of its central programs at central campuses that it owned and operated. As a result, EVIT appropriately recorded expenditures related to operating its facilities to plant operations. Therefore, 10 percent of EVIT's spending was on plant operations during this time period. Conversely, Northern Arizona Vocational Institute of Technology (NAVIT) did not provide any central programs at central campuses that it owned or operated during fiscal years 2012 through 2016. Instead, NAVIT operated all of its central programs in conjunction with community colleges, which provided teachers, equipment, supplies, instructional space, and all of the services and utilities associated with the space. NAVIT paid tuition to the community colleges for its students to enroll in community college courses, and although these tuition payments covered costs in multiple functional areas, such as instruction and plant operations, NAVIT appropriately recorded these tuition payments entirely to instruction, as is required by the Chart of Accounts. As a result, only 3 percent of NAVIT's spending was on plant operations during this time period, compared to the 10 percent that EVIT spent.

JTEDs, member districts, and non-JTEDs have implemented practices to address barriers to students' access to and awareness of CTE programs and have taken steps to continue improving CTE program quality

Chapter 6 addresses the efficiency of JTED practices, including ways districts help increase the access to, awareness of, and quality of CTE. This chapter contains no recommendations.

Joint technical education districts (JTEDs) and JTED member districts have implemented various practices to address impediments to high school students' access to and awareness of career and technical education (CTE) programs available to them, and some JTEDs, JTED member districts, and districts that are not part of a JTED (non-JTEDs) have taken steps to continue to improve the quality of their CTE programs.[42] For example, some JTEDs have built new campuses in locations that are strategically placed within their district boundaries or offer CTE programs at community colleges that have campuses located throughout their districts to make their CTE programs more accessible to students, and other JTEDs and JTED member districts provide transportation or bus passes to students. Additionally, some JTEDs, JTED member districts, and non-JTEDs have implemented various steps ranging from providing mentors to new CTE teachers to helping establish CTE program advisory boards to continue improving the quality of their CTE programs.

Some JTEDs and member districts have implemented practices to address barriers to students' access to and awareness of CTE programs

Some JTED and JTED member districts have implemented practices to help address impediments to students' access to and awareness of CTE programs available to them. During auditors' interviews, JTED and JTED member district officials indicated that there are a variety of challenges that students face in having access to JTED central campus programs and in becoming aware of the CTE programs that are offered at JTED central campuses. These challenges include distance between students' regular high schools and the nearest JTED central campus, lack of transportation to these campuses, lack of time in students' schedules to take CTE courses, and some schools' preference to promote traditional college-track class schedules over those that incorporate the completion of CTE programs as a component. To address these barriers, some JTEDs and JTED member districts have implemented practices to help improve students' access to and awareness of CTE programs. Specifically:

- **Some JTEDS built strategically placed campuses or partner with community colleges that have multiple campuses—**To make their CTE programs more accessible to students, some JTEDs have built

[42] JTED member districts are those whose voters within the district boundaries voted to approve their school districts to form a new JTED or join an existing JTED. A JTED central campus is a location where a JTED provides CTE to students from its member districts. A JTED member district's satellite campus is a high school of the member district where the member district provides CTE to its students. For more details, see the Introduction, pages 2 through 4.

new campuses in locations that are strategically placed within their district boundaries or offer CTE programs at community colleges that have campuses located throughout their districts. For example, one JTED, which encompasses 3,685 square miles, built five smaller central campuses instead of one large central campus and located these campuses throughout the district with the goal that there would be a JTED central campus within a 25-minute drive of each of its member districts' high schools. The intent was to help students attending those high schools to more easily attend a CTE program at one of this JTED's central campuses. After the JTED opened two central campuses in fiscal year 2014, the JTED's central campus enrollment increased by almost 19 percent the following year. Another JTED with a well-established and centrally located central campus built an additional, smaller central campus on the periphery of its eastern boundary in fiscal year 2012 to make some CTE programs more easily accessible to students who attend its member districts' schools that are farther away from the centrally located campus. These strategically placed campuses are intended to decrease students' travel time, which can be an impediment to students' attending a JTED central campus, as discussed in the next bullet. Additionally, five JTEDs offer CTE programs at community college campuses that have multiple campuses located throughout their districts, which allows students throughout the JTEDs to more easily attend these CTE programs. For example, Northern Arizona Vocational Institute of Technology (NAVIT) offers CTE classes at Northland Pioneer College campuses in Holbrook, Show Low, Snowflake, St. Johns, and Winslow.

- **Some JTEDs and JTED member districts provide transportation or bus passes to students—**During interviews with district superintendents and CTE directors, auditors were consistently told that the lack of a personal vehicle and long travel times on public transportation make attending a JTED central campus very difficult for some students (see Chapter 8 on page 48 for more on this topic). To address this challenge, some JTEDs and JTED member districts assist their students with transportation. For example, 7 of the 13 member districts auditors reviewed transported their students by school bus to JTED central campuses in fiscal year 2016. Additionally, for that same year, two of the five JTEDs and 3 of the 13 member districts auditors reviewed provided bus passes to students who wanted to attend a JTED central campus and did not have transportation.

- **One JTED offers tuition-free summer school classes for state-mandated academic courses so students have more time in their schedules to take CTE—**District officials at several JTEDs and JTED member districts indicated that another impediment to students attending CTE programs at JTED central campuses and JTED member districts is lack of time in their class schedules, especially as the course requirements for graduation have increased over the last few years (see Chapter 8 on pages 47 and 48 for more on this topic). The number of courses in specific academic areas that are necessary to graduate have increased beginning for the graduating class of 2013. As required courses consume a larger portion of total credits necessary to graduate, the credits available for students to take elective or CTE courses have decreased. To help students have more time during the regular school year to take CTE courses, one JTED has been offering tuition-free summer school classes since fiscal year 2013 for some state-mandated academic courses at one of its JTED central campuses. For example, students interested in freeing up time in their class schedules during the school year can take the State's required American Government and Economics courses at the JTED's central campus during the summer at no cost to the students. During the summer of 2017, 57 students from the JTED's member districts took these classes. Often, students otherwise would have to pay to attend summer school classes either for credit recovery or to complete credit requirements sooner. Additionally, this JTED also offers scholarships to students at its member districts to cover the costs for them to take summer school classes at their home high schools with the intent of freeing up time in their schedules during the regular school year to take CTE courses.[43] In fiscal year 2016, this JTED paid summer school tuition costs of nearly $96,000 for students attending summer school at its member districts.

[43] If a student is interested in obtaining a summer school scholarship, the student completes an application and submits it to the JTED. Once approved by the JTED, the JTED directly pays the summer school tuition to the student's school district. If the student fails the course or does not attend the JTED in the fall, the student/parent is responsible for reimbursing the JTED for all summer school tuition paid.

- **Some JTEDs and JTED member districts pay students' certification costs—**Some district officials at JTEDs and JTED member districts told auditors that some students likely do not take industry certification or licensure exams because they cannot afford the exam fees. To assist students who would otherwise be unable to afford to take these exams, some JTEDs and JTED member districts pay for some or all costs for their students to obtain licenses/certifications, which, depending on the CTE program, can include an exam fee and a separate fee to obtain the license/certification. Costs for some certification exams, like those for aircraft mechanics can be as much as $750. In fiscal year 2016, all five JTEDs and 7 of the 13 member districts that auditors reviewed provided financial assistance to students to help pay for some or all of the certification exam and license fees. In fiscal year 2016, JTEDs reported paying over $140,000 to assist their central and member districts' satellite students with these costs. Some JTED officials indicated that helping students pay for their certification exams and license fees creates an incentive for them to complete CTE programs and take the certification exams and obtain the licenses.

- **Some JTED practices increase CTE awareness—**During auditors' visits, some JTED district officials indicated that there are some persistent impediments that diminish student awareness of CTE programs offered at JTED central campuses. They indicated that some high school principals and guidance counselors favor students taking courses that reflect a more traditional college preparation track. As a result, they believe some students are not being made fully aware of the options and benefits of CTE programs that are offered at JTED central campuses. To help increase student awareness of CTE programs, some JTEDs reported that they have:

    - Paid stipends to guidance counselors to prepare and deliver presentations to students and parents to ensure that they are aware of available CTE programs.

    - Brought guidance counselors to JTED central campuses to showcase their programs so that counselors can become familiar with the CTE programs offered and share their knowledge with students considering CTE programs.

    - Conducted outreach to charter and private schools and attended fairs for home school providers to recruit students for CTE programs.

    - Advertised on the radio and social media to inform the community about the CTE programs they offer.

Some districts continue to improve the quality of their CTE programs

To continue improving the quality of CTE programs and student opportunities within the programs, JTEDs, JTED member districts, and non-JTED districts have taken a variety of steps ranging from providing mentors to new CTE teachers to helping to establish CTE program advisory boards. Specifically:

- **Some JTEDs and JTED member districts provide mentors to new CTE teachers—**To help new CTE teachers hired directly from industry make a successful transition into their teaching careers, in fiscal year 2016, two of the five JTEDs and 3 of the 13 member districts that auditors reviewed offered new CTE teachers opportunities to work in formal relationships with more experienced mentor teachers. These mentor teachers help new teachers know what to expect as a teacher, and they support the new teachers in critical areas like classroom management.

- **One JTED pays for teacher interns at its member districts—**Since fiscal year 2010, one JTED has offered a teacher internship program to create a pool of potential new CTE teachers. Its member districts hire intern teachers for a school year and place them in a classroom with an experienced CTE teacher who helps train them in professional areas like classroom management to help prepare them to be a teacher. The intern teachers perform duties similar to a classroom aide, such as grading and taking attendance. In fiscal year 2016, one intern teacher participated in the program. The JTED paid $18,000 of the intern teacher's salary, and the remainder of the intern teacher's salary was paid by the member district. In addition to gaining classroom experience, the intern teachers completed classes offered through the JTED, such as United

States and Arizona Constitutions, Structured English Immersion, and Instructional Best Practices, which are classes that the State requires to earn a teaching certificate.

- **One JTED pays teachers to participate in industry externships—**At one JTED that auditors reviewed, district officials indicated that they believe it is important for their teachers and the CTE teachers at their member districts to maintain their industry skills and to stay current with industry changes. In this way, CTE teachers can continue to provide up-to-date CTE instruction to their students. To achieve this goal, the JTED provides stipends to teachers who want to work in industry when school is not in session. Through this externship program, the JTED partners with companies in private industry, as well as public agencies, that agree to have teachers work in their companies or agencies when school is not in session. The companies or agencies do not pay the teachers a salary, but the JTED pays the teachers an hourly stipend. In fiscal year 2016, a total of seven teachers at the JTED and its member districts participated in its externship program. Examples include one teacher who worked at an automotive company and another teacher who worked at the Arizona Game and Fish Department to keep current on his skills as a Plant Systems teacher.

- **Many districts participate in the AZ Curriculum Consortium to share instructional resources—**The AZ Curriculum Consortium (Consortium) was formed in 2011 by Pima County JTED (PCJTED) to allow JTEDs, JTED member districts, and non-JTED districts to have a platform to share instructional resources, such as lesson plans and learning activities. These materials are required to cover Arizona's CTE standards, which are adopted by the Arizona State Board of Education and outline the instructional objectives that are to be taught in CTE programs. Through the Consortium, CTE teachers from across the State can post lesson plans and activities that they have developed and share them with other CTE teachers from districts that are members of the Consortium. Many CTE teachers interviewed by auditors said they appreciate having access to these resources and use them regularly because they are helpful and save time developing instructional materials. In fiscal year 2016, 11 of 14 JTEDs, 91 of 99 JTED member districts, and three of five non-JTED districts were members of the Consortium, which requires districts to pay a fee of $2.50 per enrollment in their CTE courses to be a member. In fiscal year 2016, four of the five JTEDs that auditors reviewed paid a combined total of approximately $97,000 for them and their member districts to have access to the Consortium's instructional resources.

- **Some districts coordinate CTE spending to maximize impact—**To maximize the impact of CTE monies, one JTED that auditors reviewed works with its member districts to ensure that CTE spending at the member districts is targeted to those areas where JTED officials believe it will have the greatest impact. Officials at this JTED indicated that they review their member districts' CTE budgets and provide input to ensure consistency between the JTED and its member districts related to priorities and vision. For example, a member district wanted to implement a new Automotive Technologies program, and it worked with the JTED to roll over its JTED monies from one year to the next in order to afford this program.[44] Additionally, one of the JTED member districts auditors reviewed requires CTE teachers at all of its satellite campuses to submit spending priorities for CTE equipment to their site principals. Site principals then work with the CTE teachers at their campuses to prioritize CTE equipment spending at each campus. The CTE director for the JTED member district then collects each campus' CTE equipment spending priorities and creates an overall CTE budget that reflects district-wide CTE priorities. In these ways, districts help ensure well-coordinated spending to maximize their CTE monies' impact.

- **Some JTEDs financially support their member districts' career and technical student organizations (CTSOs)—**To be eligible for JTED monies, statute requires that all CTE programs at JTEDs and JTED member districts have CTSOs.[45] These student organizations are intended to provide CTE students with additional opportunities to practice their CTE skills. Examples of CTSOs, which are national organizations with state and local chapters, include Future Business Leaders of America, Future Farmers of America, and DECA, which

[44] JTED monies, which comprise state, local, and county revenues, primarily result from the additional average daily membership generated for students who take CTE courses at JTED central campuses or at JTED member districts' satellite campuses. For more details, see the Introduction, pages 5 through 7.

[45] Arizona Revised Statutes §15-391(5)(d).

prepares students for careers in marketing, finance, hospitality, and management. To help JTED member districts' students participate in CTSOs, some JTEDs financially support CTSOs at their member districts. For example, in fiscal year 2016, one JTED that auditors reviewed contributed nearly $700,000 to its member districts' CTSO programs, and another JTED contributed $42,000 to its member districts' CTSO programs. Through CTSOs, students compete in local, state, regional, and national competitions. These competitions allow students to demonstrate their skills and provide them opportunities to meet competition judges who are often industry employers. Additionally, students can earn scholarships if they win certain competitions. For example, two Automotive Technologies students, who competed in the state CTSO competitions in fiscal years 2016 and 2017, each won scholarships to Universal Technical Institute, an established technical school that prepares students for careers in automotive, diesel, and collision repair. These scholarships totaled $4,000 and $6,000, respectively. Additionally, in fiscal year 2016, a Culinary Arts student won a scholarship worth $120,000 to study culinary arts at Johnson & Wales University in Rhode Island. This scholarship was funded by a nonprofit organization and resulted from the student's participation in a CTSO competition. Some CTE teachers also told auditors that some of their students have received job offers during CTSO competitions because employers were impressed with the students' skills.

- **Districts secured large donations from industry partners—**District officials at nearly all of the JTEDs, JTED member districts, and non-JTED districts that auditors reviewed indicated that they secured some form of donation from private industry for their CTE programs. For some districts, their primary industry support came from industry donating their employees' time to visit CTE programs and serve on CTE program advisory boards. To be eligible for federal Perkins or the State's JTED monies, CTE programs at all JTEDs and JTED member districts must have advisory groups, with representation from private industry, that meet at least twice a year to provide feedback on the CTE programs and share insights about trends and changes in industry (see next bullet for additional information).[46] However, some JTEDs and JTED member districts were successful at not only getting industry to donate their employees' time, but also generating significant industry donations for their CTE programs. One JTED has been able to secure donations from industry partners that include a fire truck for its Fire Service program, automobiles and engines for its Automotive Technologies program, and a $7,000 donation for its Construction Technologies program. District officials at this JTED stated that their industry partners have been willing to make these donations because they recognize that the JTED is creating a pipeline of industry-ready students for the positions these industries need, and it benefits them to have students trained on current equipment. Another JTED reported that an industry partner donated medical equipment and supplies valued at over $170,000 for its health-related programs, and another JTED reported receiving over $45,000 in diesel and gasoline engines for its automotive programs. Finally, a JTED member district reported receiving a $5,000 donation for its Automation/Robotics program. One JTED superintendent stated that the large donations were very helpful because the JTED could not have afforded the equipment otherwise.

- **Large JTED organized advisory boards for all its member districts—**To be eligible to receive federal Perkins or the State's JTED monies, districts must ensure that each CTE program offered has its own advisory board, which usually consists of industry representatives and parents. Advisory boards typically provide CTE programs with guidance on any steps they can take to improve their programs and ensure that they continue to reflect industry standards. They also provide feedback on the extent to which a current program's curriculum, standards, equipment, and facilities reflect industry standards. For the sample of 13 member districts that auditors reviewed, CTE programs at each satellite campus were responsible for ensuring that they had advisory boards, which are required to meet twice annually. Some CTE administrators mentioned that within their districts, teachers often have to compete for the same industry representatives to serve on their programs' advisory boards—a challenge that is likely even more pronounced for rural districts. To help address this challenge, one large urban JTED has made the advisory boards for its own central campus programs available to its member districts so that they do not have to organize their own and do not have to compete with other teachers or member districts for the same industry representatives. This JTED's member districts are free to organize their own advisory boards if they choose, but have the option to use the ones

[46] The Perkins grant provides federal funding to states to improve secondary and postsecondary CTE programs. For more details, see the Introduction, page 7.

organized by the JTED. Some member district programs within the JTED utilize the JTED's advisory boards, while others do not. At one member district, a CTE teacher stated that they have continued to organize their own advisory boards because they believe that it is easier to obtain donations for their programs if they cultivate their own industry relationships.

JTEDs provided member districts with varied services that reflected differences in amounts of JTED monies they allocated to their member districts

Chapter 7 addresses the relationship between JTEDs and member districts and services provided to member districts. This chapter contains no recommendations.

Joint technical education districts (JTEDs) auditors reviewed provided their member districts with statutorily required services as well as additional services, the latter of which varied depending on the amount of monies JTEDs allocated to their member districts.[47] JTEDs provided their member districts with services that are required by statute, such as teacher professional development and career and technical education (CTE) program review, but they also provided additional services, such as paying for students' certification costs, which are not required by statute. These additional services varied between the JTEDs and often depended on how much JTED monies generated by satellite campus enrollment JTEDs allocated to their member districts.[48] JTEDs that provided more of these additional services allocated less JTED monies to their member districts. Conversely, those JTEDs that provided fewer additional services allocated the greatest portion of JTED monies to their member districts.

JTEDs provided member districts with required services as well as additional services

All five JTEDs that auditors reviewed provided all the services to their member districts that are required by statute, but also provided additional services not required by statute. Laws 2016, Ch. 4, §3, requires that beginning in fiscal year 2017, intergovernmental agreements (IGAs) between JTEDs and their member districts specify that JTEDs will provide professional development opportunities for CTE teachers at member districts' satellite campuses and ongoing evaluation and support of member districts' satellite CTE programs to ensure quality and compliance.[49] All five JTEDs that auditors reviewed provided both of these required services to their member districts in fiscal year 2017. Additionally, all five JTEDs provided various additional services to their member districts that are not required by statute, such as paying for students' certification costs.

JTEDs provided professional development opportunities to their member districts' CTE teachers—As required by statute, all five JTEDs that auditors reviewed provided professional development opportunities to their member districts' CTE teachers in fiscal year 2017. Two JTEDs paid for member districts' CTE teachers and administrators to attend the annual Association for Career and Technical Education of Arizona (ACTEAZ) conference, where teachers and administrators can participate in workshops that focus on developing

[47] JTED member districts are those whose voters within the district boundaries voted to approve their school districts to form a new JTED or join an existing JTED. For more details, see the Introduction, pages 2 through 4. In this report, the relationship between JTEDs and their member districts was determined by the services that JTEDs provided their member districts and the amount of JTED monies they shared with their member districts.

[48] A JTED central campus is a location where a JTED provides CTE to students from its member districts. A JTED member district's satellite campus is a high school of the member district where the member district provides CTE to its students. For more details, see the Introduction, pages 2 through 4.

[49] Arizona Revised Statutes §15-393(L)(10).

industry skills and cover industry trends. Many CTE teachers and administrators indicated that they believe this week-long conference is valuable to their professional development and helps them to keep their skills and knowledge current. Another JTED partnered with the ACTEAZ and the Arizona Department of Education to create a series of professional development courses focused on pedagogy, which is the method or practice of teaching. These classes were specifically designed to help teachers who came from industry with no teaching experience to develop teaching and classroom skills. As discussed in Chapter 6 (see page 40), one JTED paid stipends to member districts' CTE teachers for them to work in industry externships when school is not in session. Lastly, one JTED provided its member districts with additional financial resources in the form of a higher allocation of JTED monies to independently provide professional development for their CTE teachers. Officials from both the JTED and its member districts indicated that they preferred this method of providing member districts' CTE teachers with professional development.

JTEDs reviewed member districts' satellite CTE programs—Further, in fiscal year 2017, as required by statute, all five JTEDs reviewed their member districts' satellite CTE programs to assess these programs' quality and ensure their compliance with statute. Two of these JTEDs reviewed their member districts' satellite CTE programs mostly for compliance with statute, such as ensuring that teachers were certified; the majority of instructional time was being conducted in a laboratory, field-based, or work-based environment; and the program had appropriate equipment. The other three JTEDs also reviewed their member districts' satellite CTE programs for compliance with statute but also reviewed other elements of their member districts' CTE programs such as teacher effectiveness, integration of industry and safety standards into program curriculum, appropriateness of class sizes, cleanliness of classrooms, program accomplishments, effort to promote student completion of programs, and robustness of career and technical student organizations (CTSOs). Additionally, these three JTEDs had also been conducting reviews prior to fiscal year 2017, when JTEDs were first required by statute to review their member districts' programs. Their more comprehensive reviews may partially reflect their greater experience in evaluating their member districts' CTE programs.

JTEDs provided various additional services to their member districts—In addition to providing the required professional development and program review services, all five JTEDs also provided additional services to their member districts that are not required by statute. These services included, among other things, paying for students' certification costs, paying for membership fees in the AZ Curriculum Consortium, and supporting CTSOs at member districts. See Chapter 6, pages 37 through 42, for more details about some of these services.

Percentage of JTED monies JTEDs allocated to member districts varied substantially and reflected differences in additional services they provided to member districts

For the five JTEDs auditors reviewed, the percentage of fiscal year 2016 JTED monies they allocated to member districts reflected the differences in the additional services they provided to member districts with those providing more services allocating a lower percentage of JTED monies and those providing fewer services allocating a higher percentage. As discussed in the Introduction, see pages 2 through 4, students taking CTE courses at JTED member districts' satellite campuses can generate an additional 0.25 average daily membership (ADM), which is the measure of student enrollment used for state funding purposes. JTEDs receive the funding from this additional 0.25 ADM, or "satellite ADM," and then allocate a portion of these monies to the member districts because the member districts operate the CTE courses on their satellite campuses. JTEDs and their member districts determine through IGAs how the monies generated by satellite ADM will be shared between the two districts. Auditors found that for the five JTEDs reviewed, the percentage of JTED monies that JTEDs allocated to their member districts in fiscal year 2016 varied substantially. Specifically, JTEDs that provided more additional services to their member districts allocated a smaller portion of JTED monies to their member districts, and JTEDs that provided fewer additional services allocated a higher portion of JTED monies to their member districts.

JTEDs allocated between 36 and 81 percent of JTED monies generated by satellite ADM to member districts—Auditors' review of the five JTEDs' fiscal year 2016 detailed accounting data found that these JTEDs allocated between 36 and 81 percent of JTED monies generated by satellite ADM to their member

districts. Auditors' review of the five JTEDs' IGAs found that they varied in how they determined what portion of JTED monies generated by satellite ADM they would allocate to their member districts. Specifically:

- IGAs between two JTEDs and their member districts specified that member districts would receive a fixed percentage of JTED monies generated by their satellite ADM. For both JTEDs, this fixed percentage was 65 percent.
- IGAs between one JTED and its member districts used a funding formula to determine the amount of JTED monies member districts received. This formula was based on the satellite ADM generated by the member district, the number of students enrolled in the second or third year of CTE programs at the member district's satellite campuses, and the number of the member district's students enrolled in a CTE program at a JTED central campus.
- IGAs between one JTED and its member districts specified that member districts would receive a minimum of 79 percent of the JTED monies generated by their satellite ADM. Member districts could increase this amount to 89 percent based on the number of the member district's students who enrolled in a CTE program at a JTED central campus.
- IGAs for one JTED and its member districts did not specify a basis for determining the amount of JTED monies to be allocated to its member districts, except that the amount of monies allocated to a member district shall not exceed the member district's cost to operate the CTE courses on its satellite campuses. Each year the JTED used a starting point of 70 percent of JTED monies generated by satellite ADM when it worked with each of its member districts to determine amounts to be allocated to its member districts.

JTEDs that provided more additional services to member districts allocated less monies while those that provided fewer services allocated more monies—Based on the five JTEDs auditors reviewed, JTEDs that allocated the lowest portion of JTED monies generated by satellite ADM to their member districts provided the most additional services to their member districts. It appears these JTEDs were keeping a larger portion because they were paying for more services for their member districts. For example, the JTEDs that allocated the lowest percentages of monies to member districts paid for students' certification costs, paid for membership fees in the AZ Curriculum Consortium, and financially supported CTSOs at their member districts. Conversely, JTEDs that allocated the highest percentages of satellite ADM monies to their member districts provided the least additional services to their member districts. For example, the JTED that allocated the highest percentage of JTED monies to its member districts did not pay for some services that other JTEDs paid for, such as directly providing professional development for member districts' CTE teachers or directly paying the cost of membership fees in the AZ Curriculum Consortium for its member districts, and did not financially support member districts' CTSOs. Officials at this JTED indicated that the high percentage of JTED monies allocated to its member districts should provide enough financial resources for its member districts to provide these services without additional financial help from the JTED.

CTE in Arizona faces challenges but also has opportunities to continue improving

Chapter 8 addresses additional information related to challenges and opportunities facing CTE in Arizona that auditors identified during the course of this special audit.

Districts face several challenges as they provide career and technical education (CTE) to their students, but districts also have opportunities to improve the CTE they provide. Some of these challenges include fitting CTE classes into students' schedules as academic requirements increase, a lack of student transportation to joint technical education district (JTED) central campuses, and difficulty recruiting and retaining CTE teachers. However, districts also have opportunities to continue improving the CTE they provide. For example, increased coordination between JTEDs and their member districts may make it easier for students to attend CTE programs at JTED central campuses.[50] Additionally, by leveraging their programs' successes, districts may be able to attract potential employers, which could provide more industry employment opportunities directly to their students. Further, districts can improve evaluation of their programs by collecting additional data. Finally, some districts may have additional opportunities to increase spending on their CTE teachers and programs using Classroom Site Fund monies.[51]

Broad challenges facing CTE

During auditors' district visits, JTED, JTED member district, and non-JTED district officials discussed broad challenges they face in providing CTE. Some of these challenges include students not having availability in their class schedules to take CTE courses because of increased math and science requirements for graduation and being required to take additional classes to prepare for standardized tests, students lacking transportation to JTED central campuses, and recruiting and retaining CTE teachers for some programs.

Increased math and science requirements and preparation for standardized tests leave less room in students' class schedules to take CTE courses—State-mandated student graduation requirements for math and science as well as district requirements for struggling students to take standardized-test-preparation courses have reduced the available hours in students' schedules to take CTE courses. Beginning with the class of 2013, the State increased the number of math and science credits that students must earn to graduate from high school by one credit each. The number of required math credits increased from three to four credits, and the number of science credits required increased from two to three credits. Multiple district officials stated that the increased credit requirements have made it more difficult for some students to take CTE courses because the added requirements reduce the number of elective classes, including CTE courses, that students can take during the regular school year. As mentioned in Chapter 6 (see page 38), one JTED began offering summer school classes at one of its JTED central campuses at no cost to students to help free up time during

[50] JTED member districts are those whose voters within the district boundaries voted to approve their school districts to form a new JTED or join an existing JTED. A JTED central campus is a location where a JTED provides CTE to students from its member districts. A JTED member district's satellite campus is a high school of the member district where the member district provides CTE to its students. For more details, see the Introduction, pages 2 through 4.

[51] As mentioned in the Introduction (see page 7), school districts receive Classroom Site Fund monies as a result of Proposition 301, which was approved by voters in November 2000 and increased the state-wide sales tax to provide additional resources for education programs.

the school year for other classes, including CTE classes. Additionally, several JTED officials indicated that, in addition to the classes already required for graduation, some JTED member districts require certain students to take classes to help prepare them for the state-mandated standardized tests. Typically, these are students who have failed to pass a standardized test or those whom the districts have identified as being at risk for not passing a test. Similar to the additional math and science classes students are required to take, these additional classes reduce the number of elective classes, including CTE courses, that students can take.

Some students lack transportation to attend a JTED central campus—JTED officials indicated that some students who would like to attend CTE programs at a JTED central campus that are not available at their satellite campuses do not have transportation to attend these programs. As mentioned in Chapter 6 (see page 38), 7 of the 13 member districts auditors reviewed transported their students by school bus to JTED central campuses. Additionally, two of the five JTEDs and 3 of the 13 member districts auditors reviewed provided bus passes to students who wanted to attend a JTED central campus and did not have transportation. However, the other three JTEDs and 3 member districts that auditors reviewed did not provide any transportation from member districts' high schools to their JTED's central campuses. If students at these districts want to take CTE courses at their JTED's central campuses, they must provide their own transportation or take public transportation if available and feasible considering travel time and cost. District officials stated that some students do not drive or have vehicles, and in some areas, public transportation is not available or is not feasible because of travel time.

Districts find it difficult to recruit and retain CTE teachers for some programs—District officials from many of the districts that auditors visited discussed the difficulty in recruiting and retaining teachers for certain CTE programs. To be certified as a CTE teacher by the Arizona Department of Education (ADE), CTE teachers must meet minimum industry experience requirements that range from having a bachelor's degree and 240 hours of verified work experience in the occupation they will teach or having 6,000 hours of verified work experience in the occupation they will teach if they do not have a bachelor's degree. However, individuals who have the required industry experience to qualify for a CTE teaching certificate often can earn higher incomes working in the industry as compared to teaching. For example, several district officials mentioned having the most difficulty finding nursing teachers, who are able to earn much more working in the healthcare sector than they can teaching. According to fiscal year 2016 information reported by the Bureau of Labor Statistics, the average registered nurse in Arizona made $73,500 annually, whereas according to accounting records for the JTEDs auditors reviewed, nursing teachers, who are required by the State Board of Nursing to be registered nurses, made between $43,000 and $65,000 annually.[52] Although district officials mentioned the difficulty in recruiting and retaining nursing teachers more than any other position, some also mentioned that finding teachers for construction, welding, and information technology-type CTE programs was also very difficult because it was difficult to compete with the wages that these individuals can earn in the industry.

Opportunities exist to improve CTE

Districts have opportunities to improve CTE in Arizona. Specifically, based on auditors' observations, interviews, and review of documents and data provided by JTEDs, JTED member districts, and non-JTED districts, opportunities include making it easier for students to attend JTED central campuses, bringing industry jobs to JTEDs' campuses and neighborhoods, collecting additional data to assist districts in evaluating their CTE programs, and increasing spending on CTE teachers and programs using Classroom Site Fund monies.

More students might attend JTED central campuses if JTEDs and their member districts coordinated their school calendars, bell schedules, and testing schedules—By coordinating their school calendars, bell schedules, and testing schedules, JTEDs and their member districts may encourage more students to enroll in JTED central campus courses. District officials in all the JTEDs that auditors reviewed mentioned that a lack of coordination between school calendars, bell schedules, and testing schedules creates additional challenges for students attending JTED central campuses. For example, as discussed in Chapter 3, page 22, students who attend classes at both JTED central campuses and their regular high schools may still have to attend classes at their JTED central campus when their high schools are on break or not in session

[52] Bureau of Labor Statistics, U.S. Department of Labor, *Occupational Employment Statistics Survey, May 2016 Estimates*.

because the JTED central campus classes are still in session. Additionally, when JTEDs and their member districts have not coordinated daily schedules, they may not provide their students with the necessary time to travel from students' high schools to JTED central campuses, or vice versa. For example, one JTED superintendent stated that in order for students at one member district's high school to be able to reach the JTED central campus in time to attend classes, the high school's daily bell schedule would need to be modified so that the high school started its day 15 minutes earlier. By starting the school day 15 minutes earlier, all of the high school's buses would have dropped students off in time at the high school for a bus to then transport students to the JTED central campus in time to attend morning classes.

Another challenge district officials shared with auditors is a lack of coordination among JTEDs and their member districts on testing schedules. JTED officials indicated that many of their member districts have chosen different days or weeks to conduct standardized testing. However, because JTED classes had to continue despite the absences the testing caused, there have been several weeks in a row when classes at the JTED central campuses had students who were absent because of testing at their high schools. Therefore, JTEDs and their member districts should work together to explore opportunities to coordinate their school calendars, bell schedules, and testing schedules to help eliminate some of the challenges for students who would like to attend CTE programs at JTED central campuses.

Some districts have leveraged program successes to attract industry jobs to their campuses and neighborhoods—Some JTEDs', member districts', and non-JTED districts' successful programs have attracted industry partners to their campuses and neighborhoods, providing jobs to students who have completed CTE programs and enhancing learning experiences for students still in CTE programs. For example, a satellite campus at a member district that auditors reviewed integrated its Engineering Sciences, Mechanical Drafting, and Precision Machining programs into a comprehensive program of study based on industry needs. Students in this program of study learned to design, draft, and then build projects. Because of the skills students learned in this program, a manufacturing company partnered with the member district to create a direct pipeline of skilled machinists who have completed the CTE program for its company. Additionally, a JTED that auditors reviewed has partnered with various private businesses to give its students jobs in their fields of study. Specifically, the JTED worked with a credit union to establish a branch office on one of its central campuses. Similarly, a non-JTED district that auditors reviewed also worked with a credit union to establish a branch office on one of its high school campuses. The credit unions at the JTED and non-JTED district employ students enrolled in the districts' Financial Services programs and provide them enhanced learning opportunities with work experience in an actual banking setting. Although students in CTE programs auditors visited had opportunities to work in an applied setting through externship programs with industry partners, they generally did not have opportunities to gain experience in an applied working environment solely by completing the CTE course sequence required by ADE to complete a CTE program. They generally had to enroll in an externship program above and beyond the course sequences needed to meet ADE's requirements. Whereas, all students completing their Financial Services program at these two districts had the enhanced learning experience of working in an actual bank. Districts providing CTE should explore what opportunities they might have to work with local businesses and industry to provide learning opportunities for all students in their programs.

Additionally, some JTED officials indicated that they regularly meet with their cities and other organizations, such as local chambers of commerce, regional economic development groups, and legislative committees, to discuss future workforce needs and how JTEDs can help prepare students to meet these needs. Specifically, officials at two JTEDs that auditors reviewed indicated that they meet at least monthly with these various organizations to discuss economic development goals and how the JTED can help achieve those goals. Officials at both JTEDs indicated that these organizations will often showcase the JTEDs' programs to attract businesses to the area. As a result of these collaborations, officials at one of these JTEDs indicated that two manufacturing companies relocated to their area in 2017. Officials at the other JTED indicated that they have partnered with many local businesses to develop new CTE programs and received additional donations from industry directly as a result of these collaborations. JTEDs, member districts, and non-JTED districts should continue to explore opportunities to work with their cities and the State to identify and develop CTE programs that will meet future local and state workforce needs.

District collection of additional data could further assist in evaluating the effectiveness and efficiency of CTE programs—Although JTEDs, member districts, and non-JTED districts are required to report certain data to ADE annually, there is additional data that they are not required to collect or report but that may be useful in helping them to evaluate the effectiveness and efficiency of their CTE programs. Districts receiving federal Perkins grant monies and the State's JTED monies are required to submit to ADE student-level data on enrollment by CTE course, school of attendance, grade, graduation status, and placement after graduation.[53] ADE then calculates certain performance measures using this data including:

- **Number of concentrators—**Those students who completed the first and second courses in a CTE program sequence.
- **Placement rate—**Measures the percentage of concentrators who 6 months after graduation self-reported that they had a job that was in some way related to the CTE program they concentrated in, were enrolled in a postsecondary education program, or were serving in the military.
- **Graduation rate—**Measures the percentage of concentrators who graduated from high school.

These performance measures provide important information to JTEDs and their member districts when evaluating the success and effectiveness of their CTE programs. However, there is additional data that districts are not required to collect or report that also may be useful in helping JTEDs, member districts, and non-JTED districts evaluate the effectiveness and efficiency of CTE programs. Although this was all data that some districts were already collecting, not all districts were collecting all of this data. This data includes:

- **CTE enrollment for charter school, private school, and homeschooled students attending JTED central campuses—**In fiscal year 2016, not all districts consistently reported charter school, private school, and homeschooled students enrolled in JTED central campus CTE programs to ADE. Some JTED officials indicated that there was confusion about whether or not these students should be reported. Laws 2016, Chapter 4, §4, created Arizona Revised Statutes §15-391.01(A), which requires ADE to collect and calculate certain performance measures for all students enrolled in CTE programs. Although the number of charter school, private school, and homeschooled students who were not reported is likely relatively small and would not materially impact state-wide total CTE course enrollment, JTEDs and member districts should work with ADE to develop and implement ways to consistently collect data for all students participating in CTE programs.
- **Industry certifications earned—**Districts should collect data on all industry certifications that are earned by their students while enrolled in CTE programs. This would allow districts to determine the percentage of their concentrators who earned industry recognized certifications, as well as which certifications they earned. This data could be used to help answer important questions such as:
    - What percent of concentrators are prepared to meet industry standards as evaluated by certification exams?
    - Do certain certifications appear to result in higher levels of job placement?
    - Are there significant differences in the percentage of students who earn certifications between satellite campuses within a member district, and between programs at satellite campuses, JTED central campuses, and non-JTED campuses?

  Some district officials indicated that they are interested in collecting this data but that there are some difficulties in doing so, primarily that they have to rely on students to self-report whether they earned certifications because many of the third-party testing organizations will not release this information to the districts. Additionally, some certifications and licenses may not be able to be attained until a student graduates because of age requirements or required work experience. Although there may be challenges to collecting and verifying

[53] The Perkins grant provides federal funding to states to improve secondary and postsecondary CTE programs. JTED monies, which comprise state, local, and county revenues, primarily result from the additional average daily membership generated for students who take CTE courses at JTED central campuses or at JTED member districts' satellite campuses. For more details, see the Introduction, pages 5 through 7.

certifications that students have earned, similar to student-reported placement data, districts should seek ways to collect this data. For example, one JTED that auditors reviewed was able to obtain some certification results by offering to reimburse students who took certification exams when students presented exam results. In this way, students had an incentive to provide exam results to the JTED.

- **College credits earned—**Districts should also collect data on all college credits that students earned through enrollment in districts' CTE programs. This would allow districts to determine the percentage of students in a CTE program who earned college credit. This data could be used to help determine whether earning college credits through a CTE program impacts students' job placement or college placement.

- **Retention rate—**Additionally, districts should collect data on the percentage of students who completed at least one course in a program and then went on to complete the entire program. In other words, of the students who begin a CTE program, what percent continue on to complete all courses in the program? This data would allow districts to determine:

    - How much they spend to produce a program completer—that is, a student who completes all courses in a program and should be career ready.

    - Differences in retention rates between satellite campuses within a member district; between programs at satellite campuses; and between member districts, JTEDs, and non-JTED districts. If differences exist, this information could allow districts to explore the reasons why and seek to replicate the results of those districts, campuses, and programs with the best results.

    - Whether the steps they have taken to continue improving their CTE programs' access, awareness, and quality have improved their retention rates and their ability to produce career-ready students.

- **Program costs—**Laws 2016, Ch. 4, §4, required the Office of the Auditor General, in consultation with ADE, to develop uniform-cost-reporting guidelines to allow for the effective comparison of costs between JTED programs. Beginning in fiscal year 2018, JTEDs and member districts are required to record actual costs by CTE program in their accounting records. Using this data with data described above can help districts calculate performance measures such as total costs per CTE program and cost per program completer.

JTEDs that face limitations in spending Classroom Site Fund (CSF) monies should explore available options for spending to improve CTE programs—Some JTEDs that auditors reviewed stated that they are unable to spend CSF monies that are generated by their central campus students, but they should work with ADE and their legal counsels to determine what options for spending these monies might be available to them. All districts receive CSF monies based on their number of students as a result of Proposition 301, which was approved by voters in 2000 and increased the state-wide sales tax to provide additional resources for education programs. Pursuant to statute, these monies may be spent only in specific proportions for three main purposes: teacher base pay increases, teacher performance pay, and certain maintenance and operation purposes, including reducing class sizes, providing dropout prevention programs, and making additional increases in teacher pay. Although some JTEDs have spent their CSF monies for these purposes, other JTEDs have indicated that they are unable to spend their CSF monies intended to increase teacher base pay, as well as those intended to reward teachers for additional performance. These JTEDs are those who partner with community colleges to provide their CTE programs. As previously discussed in the Introduction (see pages 2 and 3), when JTEDs provide CTE through a community college partner, the JTEDs use the community colleges' teaching staff to teach CTE courses. Therefore, these teachers are not employed by the JTEDs but rather by the community colleges. As a result, the JTEDs do not have their own central campus teachers on whom to spend those CSF monies that they received. For this reason, in fiscal year 2016, three JTEDs in the State did not spend their CSF monies intended for base pay increases and additional teacher performance pay, but instead carried over the unspent monies to fiscal year 2017. In fiscal year 2016, these districts received $108,389 of CSF monies. Although these districts do not have their own central campus teachers on whom to spend these monies, they should work with ADE and their legal counsels to explore their options for spending these monies, which may include allocating the monies to their member districts to be used for CSF-allowable purposes related to their member districts' CTE programs.

Recommendations

1. JTEDs and their member districts should work together to explore opportunities to coordinate their school calendars, bell schedules, and testing schedules to help eliminate some of the challenges for students who would like to attend CTE programs at JTED central campuses.

2. JTEDs, member districts, and non-JTED districts should continue to explore opportunities to work with local businesses and industry to provide learning opportunities for all students in their CTE programs.

3. JTEDs, member districts, and non-JTED districts should continue to explore opportunities to work with their cities and the State to identify and develop CTE programs that will meet future local and state workforce needs.

4. JTEDs, member districts, non-JTED districts, and ADE should work together to develop and implement ways to consistently collect data for all students participating in CTE programs pertaining to industry certifications and college credits their students earn, calculate retention rates, and use cost data to calculate performance measures such as costs per CTE program and cost per program completer to help evaluate programs' effectiveness and efficiency.

5. JTEDs that receive CSF monies generated by their central campus students but that do not employ their own central campus teachers should work with ADE and their legal counsels to explore their options for spending CSF monies in an allowable manner.

APPENDIX A

Career and technical education (CTE) consists of an organized set of specialized courses for pupils in grades 9 through 12 that prepare them for occupations that do not normally require a baccalaureate or an advanced degree and provide them with sufficient skills for entry into an occupation. Table 4 presents the 73 state-wide CTE programs in fiscal year 2016.

Table 4
CTE programs
Fiscal year 2016
(Unaudited)

- Accounting and Related Services
- Advertising and Public Relations[1]
- Agribusiness Systems
- Air Transportation
- Aircraft Mechanics
- Animal Systems
- Animation
- Architectural Drafting
- Arts Management[1]
- Automation/Robotics
- Automotive Collision Repair
- Automotive Technologies
- Bioscience
- Business Management and Administrative Services
- Business Operations Support and Assistant Services
- Cabinetmaking
- Carpentry
- Computer Maintenance
- Construction Technologies
- Cosmetology and Related Personal Grooming Services
- Culinary Arts
- Dental Assisting
- Diesel Engine Repair
- Digital Communications
- Digital Photography
- Digital Printing
- Early Childhood Education
- Education Professions
- Electronic Technologies
- Electronics Drafting
- Emergency Medical Services
- Engineering Sciences
- Entertainment Marketing[1]
- Entrepreneurship[1]
- Environmental Service Systems[1]
- Fashion Design and Merchandising
- Film and TV
- Financial Services
- Fire Service
- Food Products and Processing Systems[1, 2]
- Graphic/ Web Design
- Health Information Technology
- Heating, Ventilation and Air Conditioning
- Heavy Equipment Operations
- Heavy/Industrial Equipment Maintenance Technologies[2]
- Hospitality Management
- Industrial Electrician
- Interior Design and Merchandising
- Laboratory Assisting
- Law, Public Safety and Security
- Mechanical Drafting
- Medical Assisting Services
- Medical Imaging Support Services[2]
- Mental and Social Health Services
- Music/Audio Production
- Natural Renewable Resources Systems
- Network Technologies
- Nursing Services
- Pharmacy Support Services
- Plant Systems
- Power, Structural and Technical Systems[1]
- Precision Machining
- Professional Sales and Marketing
- Residential Electrician
- Respiratory Therapy Technician[2]
- Software Development
- Sports Medicine and Rehabilitation Services
- Surgical Technician[2]
- Technical Theatre
- Therapeutic Massage
- Veterinary Assistant
- Web Page Development
- Welding Technologies

[1] The Arizona Department of Education (ADE) determined that these seven programs do not meet all statutory requirements for joint technical education district (JTED) monies beginning in fiscal year 2017. For more details, see the Introduction (page 2).

[2] No enrollment was reported for these five programs in fiscal year 2016.

Source: ADE's *2017 Joint Technical Education District (JTED) Report.*

APPENDIX B

This appendix presents fiscal year 2016 student course enrollment in career and technical education (CTE) programs, including introductory courses shared by multiple programs, for each of the 14 joint technical education districts (JTEDs) and their 99 member districts as well as for the five school districts that were not part of a JTED (non-JTED districts) in fiscal year 2016. See the Introduction, pages 1 through 4, for descriptions of and additional information about CTE programs, JTEDs, JTED member districts, and non-JTED districts.

Table 5
Central and satellite student enrollment in CTE programs by JTED
Fiscal year 2016
(Unaudited)

JTED: Central Arizona Valley Institute of Technology (CAVIT)

		JTED member districts' satellite enrollment					
CTE program	JTED central enrollment	JTED member districts' total enrollment	Casa Grande UHSD	Coolidge USD	Florence USD	Maricopa USD	Santa Cruz Valley UHSD
Agribusiness Systems	0	157	0	62	95	0	0
Air Force JROTC	0	74	0	0	0	74	0
Allied Health Intro Courses	12	0	0	0	0	0	0
Animal Systems	0	54	0	54	0	0	0
Automotive Technologies	0	126	48	0	0	78	0
Bioscience	0	21	21	0	0	0	0
Business Management and Administrative Services	0	87	0	35	52	0	0
Business Operations Support and Assistant Services	0	70	0	0	70	0	0
Construction Technologies	0	75	50	0	0	0	25
Construction Technologies Intro Courses	0	213	142	0	0	0	71
Cosmetology and Related Personal Grooming Services	65	0	0	0	0	0	0
Culinary Arts	0	952	427	132	142	169	82
Dental Assisting	45	0	0	0	0	0	0
Diesel Engine Repair	16	0	0	0	0	0	0
Digital Communications	0	32	0	0	0	32	0
Digital Photography	0	159	0	0	53	106	0
Digital Printing	0	27	0	0	0	27	0
Early Childhood Education	0	417	367	50	0	0	0
Engineering Sciences	0	279	63	0	180	36	0
Fashion Design and Merchandising	0	15	0	0	15	0	0
Film and TV	0	188	0	0	154	34	0
Fire Service	78	0	0	0	0	0	0

Table 5 (continued)

JTED: Central Arizona Valley Institute of Technology (CAVIT) (concluded)

CTE program	JTED central enrollment	JTED member districts' satellite enrollment					
		JTED member districts' total enrollment	Casa Grande UHSD	Coolidge USD	Florence USD	Maricopa USD	Santa Cruz Valley UHSD
Graphic/Web Design	0	129	0	0	0	129	0
Information Technology Intro Courses	0	80	0	0	0	80	0
Law, Public Safety, and Security	105	0	0	0	0	0	0
Marketing, Management, and Entrepreneurship Intro Courses	0	319	147	51	0	121	0
Medical Assisting Services	134	0	0	0	0	0	0
Nursing Services	97	0	0	0	0	0	0
Plant Systems	0	154	143	11	0	0	0
Power, Structural, and Technical Systems	0	36	20	16	0	0	0
Professional Sales and Marketing	0	138	120	18	0	0	0
Sports Medicine and Rehabilitation Services	0	21	0	0	21	0	0
Technical Theatre	0	197	88	12	0	97	0
Therapeutic Massage	56	0	0	0	0	0	0
Transportation Technologies Intro Courses	0	61	61	0	0	0	0
Veterinary Assistant	113	0	0	0	0	0	0
Welding Technologies	0	40	38	0	0	0	2
Total enrollment	**721**	**4,121**	**1,735**	**441**	**782**	**983**	**180**

Table 5 (continued)

JTED: Cobre Valley Institute of Technology (CVIT)

CTE program	JTED central enrollment	JTED member districts' total enrollment	JTED member districts' satellite enrollment				
			Globe USD	Hayden-Winkelman USD	Miami USD	San Carlos USD	Superior USD
Advertising and Public Relations	0	47	0	0	0	0	47
Agribusiness Systems	0	117	117	0	0	0	0
Army JROTC	0	116	116	0	0	0	0
Automation/Robotics	0	12	0	0	12	0	0
Automotive Technologies	0	8	8	0	0	0	0
Communication Media Technology Intro Courses	2	64	0	0	64	0	0
Construction Technologies	0	29	0	0	29	0	0
Cosmetology and Related Personal Grooming Services	5	0	0	0	0	0	0
Culinary Arts	0	110	0	0	0	65	45
Digital Communications	0	39	39	0	0	0	0
Digital Photography	0	134	134	0	0	0	0
Drafting and Design Tech Intro Courses	0	4	0	0	4	0	0
Early Childhood Education	0	29	0	0	0	0	29
Education Professions	0	38	0	14	10	0	14
Engineering Sciences	4	7	0	0	7	0	0
Film and TV	0	17	17	0	0	0	0
Fire Service	8	0	0	0	0	0	0
Graphic/Web Design	10	37	0	13	24	0	0
Hospitality Management	0	88	58	0	0	16	14
Marketing, Management, and Entrepreneurship Intro Courses	0	21	0	12	9	0	0
Medical Assisting Services	14	0	0	0	0	0	0
Music/Audio Production	0	6	0	0	6	0	0
Natural Renewable Resources Systems	0	74	0	0	0	74	0
Nursing Services	48	0	0	0	0	0	0
Professional Sales and Marketing	0	3	0	0	3	0	0
Sports Medicine and Rehabilitation Services	0	52	43	0	9	0	0
Technical Theatre	0	56	56	0	0	0	0
Transportation Technologies Intro Courses	0	7	7	0	0	0	0
Welding Technologies	14	0	0	0	0	0	0
Total enrollment	105	1,115	595	39	177	155	149

Table 5 (continued)

JTED: Cochise Technology District (CTD)

CTE program	JTED central enrollment	JTED member districts' total enrollment	JTED member districts' satellite enrollment									
			Benson USD	Bisbee USD	Bowie USD	Douglas USD	San Simon USD	Sierra Vista USD	St. David USD	Tombstone USD	Valley UHSD	Willcox USD
Accounting and Related Services	0	65	55	0	0	0	0	10	0	0	0	0
Advertising and Public Relations	0	9	9	0	0	0	0	0	0	0	0	0
Agribusiness Systems	0	48	0	0	0	48	0	0	0	0	0	0
Allied Health Intro Courses	7	186	0	0	0	47	0	133	6	0	0	0
Animal Systems	0	326	10	0	0	0	52	0	0	24	0	240
Architectural Drafting	0	24	0	0	0	24	0	0	0	0	0	0
Army JROTC	0	329	0	0	0	0	0	244	0	85	0	0
Automotive Collision Repair	0	38	0	0	0	0	0	38	0	0	0	0
Automotive Technologies	0	124	0	0	0	71	0	35	0	0	0	18
Bioscience	0	295	0	18	0	277	0	0	0	0	0	0
Business Management and Administrative Services	0	201	0	52	0	91	0	0	0	11	47	0
Business Operations Support and Assistant Services	0	27	0	0	0	0	0	0	27	0	0	0
Cabinetmaking	0	20	0	0	0	0	0	0	0	11	0	9
Communication Media Technology Intro Courses	0	315	57	20	0	103	0	74	0	0	0	61
Computer Maintenance	0	29	0	0	0	19	0	0	0	10	0	0
Construction Technologies	0	74	62	12	0	0	0	0	0	0	0	0
Construction Technologies Intro Courses	0	125	50	26	0	0	0	0	0	7	0	42
Culinary Arts	0	677	123	86	0	124	0	176	58	59	51	0
Digital Communications	0	22	22	0	0	0	0	0	0	0	0	0
Digital Photography	0	33	24	0	0	0	0	9	0	0	0	0
Drafting and Design Tech Intro Courses	0	66	0	0	0	66	0	0	0	0	0	0
Early Childhood Education	0	105	0	0	0	102	0	0	3	0	0	0
Education Professions	0	96	0	0	0	85	0	11	0	0	0	0
Electrical and Power Transmission Tech Intro Courses	2	0	0	0	0	0	0	0	0	0	0	0
Emergency Medical Services	0	25	0	0	0	0	0	25	0	0	0	0
Engineering Sciences	0	119	0	0	0	26	0	93	0	0	0	0
Entrepreneurship	0	75	16	0	0	30	0	29	0	0	0	0
Environmental Service Systems	0	38	38	0	0	0	0	0	0	0	0	0
Film and TV	0	85	0	0	0	21	0	27	0	0	0	37
Financial Services	0	231	108	0	0	0	0	123	0	0	0	0
Fire Service	0	113	0	0	0	113	0	0	0	0	0	0
Graphic/Web Design	0	61	35	0	0	26	0	0	0	0	0	0
Heating, Ventilation, and Air Conditioning	2	0	0	0	0	0	0	0	0	0	0	0
Hospitality Management	0	16	16	0	0	0	0	0	0	0	0	0
Industrial Electrician	3	0	0	0	0	0	0	0	0	0	0	0
Information Technology Intro Courses	6	89	0	0	0	71	0	18	0	0	0	0
Law, Public Safety, and Security	0	285	0	0	0	149	0	116	0	20	0	0
Marketing, Management, and Entrepreneurship Intro Courses	0	227	42	0	0	151	0	34	0	0	0	0
Mechanical Drafting	0	23	0	0	0	23	0	0	0	0	0	0
Mental and Social Health Services	49	0	0	0	0	0	0	0	0	0	0	0

Table 5 (continued)

JTED: Cochise Technology District (CTD) (concluded)

CTE program	JTED central enrollment	JTED member districts' total enrollment	JTED member districts' satellite enrollment									
			Benson USD	Bisbee USD	Bowie USD	Douglas USD	San Simon USD	Sierra Vista USD	St. David USD	Tombstone USD	Valley UHSD	Willcox USD
Network Technologies	1	7	0	0	0	7	0	0	0	0	0	0
Nursing Services	90	116	0	0	0	0	0	102	11	2	1	0
Pharmacy Support Services	6	0	0	0	0	0	0	0	0	0	0	0
Plant Systems	0	122	0	0	0	22	0	0	26	0	74	0
Professional Sales and Marketing	0	52	0	0	0	52	0	0	0	0	0	0
Sports Medicine and Rehabilitation Services	0	72	0	0	0	39	0	33	0	0	0	0
Technical Theatre	0	125	0	0	0	0	0	125	0	0	0	0
Transportation Technologies Intro Courses	0	187	0	0	0	45	0	117	0	0	0	25
Web Page Development	0	8	0	0	0	0	0	8	0	0	0	0
Welding Technologies	0	55	55	0	0	0	0	0	0	0	0	0
Total enrollment	**166**	**5,365**	**722**	**214**	**0**	**1,832**	**52**	**1,580**	**131**	**229**	**173**	**432**

Table 5 (continued)

JTED: Coconino Association for Vocations, Industry and Technology (CAVIAT)

CTE program	JTED central enrollment	JTED member districts' satellite enrollment					
		JTED member districts' total enrollment	Flagstaff USD	Fredonia-Moccasin USD	Grand Canyon USD	Page USD	Williams USD
Allied Health Intro Courses	0	28	0	0	0	28	0
Animal Systems	0	6	0	6	0	0	0
Architectural Drafting	0	11	0	0	0	11	0
Automotive Collision Repair	0	43	0	0	0	43	0
Automotive Technologies	0	231	166	18	0	47	0
Bioscience	22	11	0	0	0	0	11
Business Management and Administrative Services	35	108	108	0	0	0	0
Cabinetmaking	0	65	65	0	0	0	0
Communication Media Technology Intro Courses	0	204	57	0	0	147	0
Computer Maintenance	0	7	0	0	0	7	0
Construction Technologies	0	15	0	12	0	0	3
Construction Technologies Intro Courses	0	93	29	0	0	36	28
Cosmetology and Related Personal Grooming Services	1	0	0	0	0	0	0
Culinary Arts	0	606	375	15	12	173	31
Design and Merchandising Intro Courses	0	29	29	0	0	0	0
Digital Photography	0	288	265	0	0	23	0
Digital Printing	0	81	0	0	0	81	0
Drafting and Design Tech Intro Courses	0	19	0	0	0	19	0
Early Childhood Education	0	92	86	6	0	0	0
Education Professions	0	39	0	0	0	39	0
Engineering Sciences	15	226	226	0	0	0	0
Entrepreneurship	0	22	22	0	0	0	0
Fashion Design and Merchandising	8	0	0	0	0	0	0
Film and TV	0	123	118	0	5	0	0
Fire Service	1	0	0	0	0	0	0
Graphic/Web Design	0	78	65	13	0	0	0
Hospitality Management	1	0	0	0	0	0	0
Information Technology Intro Courses	1	90	0	0	0	90	0
Interior Design and Merchandising	0	45	45	0	0	0	0
Law, Public Safety, and Security	4	72	0	0	0	63	9
Marketing, Management, and Entrepreneurship Intro Courses	0	30	30	0	0	0	0
Medical Assisting Services	5	0	0	0	0	0	0
Network Technologies	2	3	0	0	0	3	0
Nursing Services	70	0	0	0	0	0	0
Precision Machining	0	50	50	0	0	0	0
Precision Manufacturing Intro Courses	0	32	32	0	0	0	0
Professional Sales and Marketing	0	2	0	0	2	0	0
Sports Medicine and Rehabilitation Services	0	114	83	0	0	31	0
Technical Theatre	0	28	0	0	0	28	0
Transportation Technologies Intro Courses	0	260	127	0	0	133	0
Welding Technologies	0	368	187	4	0	161	16
Total enrollment	**165**	**3,519**	**2,165**	**74**	**19**	**1,163**	**98**

Table 5 (continued)

JTED: East Valley Institute of Technology (EVIT)

CTE program	JTED central enrollment	JTED member districts' satellite enrollment										
		JTED member districts' total enrollment	Apache Junction USD	Chandler USD	Fountain Hills USD	Gilbert USD	Higley USD	J.O. Combs USD	Mesa USD	Queen Creek USD	Scottsdale USD	Tempe UHSD
Air Transportation	82	0	0	0	0	0	0	0	0	0	0	0
Allied Health Intro Courses	228	1,332	0	512	19	243	0	0	319	0	239	0
Animal Systems	0	622	0	0	0	0	0	204	418	0	0	0
Animation	73	93	0	0	0	0	0	0	0	0	0	93
Architectural Drafting	0	117	0	54	0	0	0	0	22	0	0	41
Automotive Collision Repair	35	0	0	0	0	0	0	0	0	0	0	0
Automotive Technologies	122	625	0	121	0	68	0	0	208	0	0	228
Bioscience	0	2,103	0	52	0	143	138	0	638	24	221	887
Business Management and Administrative Services	0	4,013	0	121	19	0	0	48	0	0	0	3,825
Business Operations Support and Assistant Services	0	879	0	0	0	879	0	0	0	0	0	0
Cabinetmaking	0	363	0	175	0	45	0	0	143	0	0	0
Carpentry	0	146	0	0	0	0	0	0	0	146	0	0
Communication Media Technology Intro Courses	43	1,670	0	0	121	994	0	0	198	0	149	208
Computer Maintenance	17	208	0	0	0	17	0	0	100	0	0	91
Construction Technologies	64	235	0	0	0	0	0	0	0	0	0	235
Construction Technologies Intro Courses	0	244	0	0	0	132	0	0	112	0	0	0
Cosmetology and Related Personal Grooming Services	378	0	0	0	0	0	0	0	0	0	0	0
Culinary Arts	215	4,368	0	1,038	0	1,083	0	0	1,159	189	128	771
Dental Assisting	77	0	0	0	0	0	0	0	0	0	0	0
Design and Merchandising Intro Courses	24	133	0	0	12	121	0	0	0	0	0	0
Diesel Engine Repair	31	0	0	0	0	0	0	0	0	0	0	0
Digital Communications	0	632	0	0	0	51	0	36	54	0	90	401
Digital Photography	15	2,291	0	403	43	270	331	123	540	0	0	581
Digital Printing	0	105	0	105	0	0	0	0	0	0	0	0
Drafting and Design Tech Intro Courses	0	120	0	0	0	19	0	0	101	0	0	0
Early Childhood Education	33	1,746	0	450	0	365	0	88	0	115	64	664
Education Professions	0	358	0	0	0	51	0	0	307	0	0	0
Electronic Technologies	0	80	0	0	0	0	0	0	80	0	0	0
Electronics Drafting	0	3	0	0	0	3	0	0	0	0	0	0
Emergency Medical Services	43	0	0	0	0	0	0	0	0	0	0	0
Engineering Sciences	32	1,960	0	242	0	319	132	0	219	69	96	883
Entertainment Marketing	0	87	0	66	0	0	0	0	0	0	21	0
Entrepreneurship	0	36	0	36	0	0	0	0	0	0	0	0
Environmental Service Systems	0	146	0	0	0	0	0	0	146	0	0	0
Fashion Design and Merchandising	11	213	0	82	2	12	0	0	19	22	0	76
Film and TV	26	1,628	0	399	43	52	238	29	411	92	98	266
Financial Services	0	354	0	0	0	0	0	0	0	0	354	0
Fire Service	61	0	0	0	0	0	0	0	0	0	0	0
Graphic/Web Design	16	1,035	0	430	16	0	140	107	0	131	148	63
Heating, Ventilation, and Air Conditioning	15	0	0	0	0	0	0	0	0	0	0	0
Hospitality Management	0	123	0	0	0	0	0	0	0	0	123	0

Table 5 (continued)

JTED: East Valley Institute of Technology (EVIT) (concluded)

CTE program	JTED central enrollment	JTED member districts' total enrollment	JTED member districts' satellite enrollment									
			Apache Junction USD	Chandler USD	Fountain Hills USD	Gilbert USD	Higley USD	J.O. Combs USD	Mesa USD	Queen Creek USD	Scottsdale USD	Tempe UHSD
Information Technology Intro Courses	112	1,113	0	0	0	448	0	0	547	0	118	0
Interior Design and Merchandising	3	9	0	0	0	9	0	0	0	0	0	0
Laboratory Assisting	0	73	0	0	0	0	0	0	73	0	0	0
Law, Public Safety, and Security	96	2,080	0	0	0	0	0	0	0	0	0	2,080
Marketing, Management, and Entrepreneurship Intro Courses	0	995	0	263	0	440	0	0	209	0	83	0
Mechanical Drafting	0	24	0	0	0	0	0	0	24	0	0	0
Medical Assisting Services	261	0	0	0	0	0	0	0	0	0	0	0
Music/Audio Production	61	157	0	0	0	0	0	0	0	0	157	0
Network Technologies	15	0	0	0	0	0	0	0	0	0	0	0
Nursing Services	165	383	0	219	16	0	0	76	0	0	72	0
Pharmacy Support Services	40	0	0	0	0	0	0	0	0	0	0	0
Plant Systems	0	1,723	0	538	0	1,094	0	0	0	91	0	0
Precision Machining	10	0	0	0	0	0	0	0	0	0	0	0
Professional Sales and Marketing	0	722	0	44	0	89	427	0	77	83	2	0
Software Development	11	610	0	252	0	114	0	61	124	0	59	0
Sports Medicine and Rehabilitation Services	31	1,091	0	140	0	67	404	87	122	147	46	78
Technical Theatre	0	622	0	66	0	125	0	66	66	18	115	166
Therapeutic Massage	42	0	0	0	0	0	0	0	0	0	0	0
Transportation Technologies Intro Courses	0	662	0	0	0	157	0	0	505	0	0	0
Veterinary Assistant	156	0	0	0	0	0	0	0	0	0	0	0
Web Page Development	0	59	0	0	0	0	0	0	59	0	0	0
Welding Technologies	154	681	0	0	0	0	0	0	681	0	0	0
Total enrollment	2,798	39,072	0	5,808	291	7,410	1,810	925	7,681	1,127	2,383	11,637

Table 5 (continued)

JTED: Gila Institute for Technology (GIFT)

CTE program	JTED central enrollment	JTED member districts' total enrollment	JTED member districts' satellite enrollment					
			Duncan USD	Ft. Thomas USD	Morenci USD	Pima USD	Safford USD	Thatcher USD
Accounting and Related Services	0	39	8	0	0	12	14	5
Allied Health Intro Courses	32	0	0	0	0	0	0	0
Automotive Technologies	14	92	0	29	0	0	63	0
Business Management and Administrative Services	4	46	6	40	0	0	0	0
Business Operations Support and Assistant Services	0	280	13	0	0	110	130	27
Cabinetmaking	0	176	36	0	0	93	0	47
Carpentry	0	62	0	62	0	0	0	0
Communication Media Technology Intro Courses	0	19	0	0	19	0	0	0
Construction Technologies	0	4	0	0	0	0	0	4
Cosmetology and Related Personal Grooming Services	32	0	0	0	0	0	0	0
Culinary Arts	0	275	0	0	72	0	155	48
Drafting and Design Tech Intro Courses	0	6	0	0	6	0	0	0
Early Childhood Education	6	128	0	0	0	0	128	0
Electrical and Power Transmission Tech Intro Courses	0	5	0	0	5	0	0	0
Film and TV	11	20	0	0	0	0	0	20
Graphic/Web Design	8	52	0	0	17	35	0	0
Industrial Electrician	0	4	0	0	4	0	0	0
Information Technology Intro Courses	0	9	0	0	0	0	0	9
Laboratory Assisting	10	0	0	0	0	0	0	0
Law, Public Safety, and Security	22	0	0	0	0	0	0	0
Mechanical Drafting	33	3	0	0	3	0	0	0
Natural Renewable Resources Systems	0	61	0	61	0	0	0	0
Nursing Services	52	0	0	0	0	0	0	0
Pharmacy Support Services	3	0	0	0	0	0	0	0
Plant Systems	0	182	53	0	0	0	129	0
Sports Medicine and Rehabilitation Services	45	0	0	0	0	0	0	0
Transportation Technologies Intro Courses	0	70	0	0	0	0	70	0
Welding Technologies	19	92	0	0	39	53	0	0
Total enrollment	**291**	**1,625**	**116**	**192**	**165**	**303**	**689**	**160**

Table 5 (continued)

JTED: Mountain Institute Joint Technical Education District (MIJTED)

CTE program	JTED central enrollment	JTED member districts' satellite enrollment: JTED member districts' total enrollment	Ash Fork Joint USD	Bagdad USD	Chino Valley USD	Humboldt USD	Mayer USD	Prescott USD	Seligman USD
Accounting and Related Services	0	19	0	0	0	0	0	19	0
Agribusiness Systems	0	152	0	0	152	0	0	0	0
Air Transportation	20	0	0	0	0	0	0	0	0
Allied Health Intro Courses	70	0	0	0	0	0	0	0	0
Animal Systems	11	24	0	0	0	0	0	0	24
Architectural Drafting	3	23	0	0	23	0	0	0	0
Automotive Technologies	25	75	0	15	0	0	0	60	0
Bioscience	0	57	0	0	57	0	0	0	0
Business Management and Administrative Services	66	166	0	9	0	0	18	139	0
Construction Technologies	0	14	0	14	0	0	0	0	0
Culinary Arts	58	100	0	0	97	3	0	0	0
Digital Communications	0	49	0	0	0	0	0	49	0
Digital Photography	0	21	0	0	0	21	0	0	0
Drafting and Design Tech Intro Courses	4	29	0	0	29	0	0	0	0
Education Professions	4	1	0	0	0	1	0	0	0
Film and TV	0	129	0	0	0	129	0	0	0
Industrial Electrician	7	0	0	0	0	0	0	0	0
Information Technology Intro Courses	34	398	0	0	0	398	0	0	0
Medical Assisting Services	20	9	0	0	0	9	0	0	0
Network Technologies	84	0	0	0	0	0	0	0	0
Nursing Services	4	26	0	0	0	26	0	0	0
Plant Systems	22	105	0	0	0	0	105	0	0
Precision Machining	23	0	0	0	0	0	0	0	0
Precision Manufacturing Intro Courses	10	0	0	0	0	0	0	0	0
Professional Sales and Marketing	0	117	0	0	0	117	0	0	0
Sports Medicine and Rehabilitation Services	0	39	0	0	10	29	0	0	0
Technical Theatre	0	70	0	0	0	70	0	0	0
Transportation Technologies Intro Courses	16	0	0	0	0	0	0	0	0
Welding Technologies	96	27	10	17	0	0	0	0	0
Total enrollment	**577**	**1,650**	**10**	**55**	**368**	**803**	**123**	**267**	**24**

Table 5 (continued)

JTED: Northeast Arizona Technological Institute of Vocational Education (NATIVE)

CTE program	JTED central enrollment	JTED member districts' total enrollment	JTED member districts' satellite enrollment							
			Chinle USD	Ganado USD	Kayenta USD	Piñon USD	Red Mesa USD	Sanders USD	Tuba City USD	Window Rock USD
Accounting and Related Services	0	18	18	0	0	0	0	0	0	0
Agribusiness Systems	0	42	0	42	0	0	0	0	0	0
Allied Health Intro Courses	1	0	0	0	0	0	0	0	0	0
Animal Systems	0	322	45	25	194	0	0	58	0	0
Architectural Drafting	0	82	17	33	21	0	0	9	2	0
Army JROTC	0	183	0	0	0	183	0	0	0	0
Automotive Technologies	2	95	20	0	0	33	0	0	27	15
Business Management and Administrative Services	0	117	44	0	49	0	0	0	24	0
Carpentry	0	22	0	0	0	0	22	0	0	0
Communication Media Technology Intro Courses	25	128	15	61	0	0	0	0	0	52
Construction Technologies	0	140	23	19	45	11	0	16	15	11
Construction Technologies Intro Courses	0	189	41	13	56	15	19	10	23	12
Cosmetology and Related Personal Grooming Services	5	27	27	0	0	0	0	0	0	0
Culinary Arts	67	255	52	91	0	47	0	26	39	0
Digital Photography	9	0	0	0	0	0	0	0	0	0
Digital Printing	0	17	17	0	0	0	0	0	0	0
Drafting and Design Tech Intro Courses	0	52	32	10	0	0	0	0	10	0
Early Childhood Education	0	161	0	0	107	0	0	0	54	0
Education Professions	0	16	0	0	0	16	0	0	0	0
Electronic Technologies	0	67	67	0	0	0	0	0	0	0
Entrepreneurship	0	126	0	0	72	0	21	0	0	33
Film and TV	0	19	19	0	0	0	0	0	0	0
Fire Service	1	0	0	0	0	0	0	0	0	0
Graphic/Web Design	12	86	0	23	0	0	0	16	25	22
Heavy Equipment Operations	0	29	29	0	0	0	0	0	0	0
Hospitality Management	25	0	0	0	0	0	0	0	0	0
Marketing, Management, and Entrepreneurship Intro Courses	0	46	0	0	0	0	19	0	0	27
Medical Assisting Services	8	0	0	0	0	0	0	0	0	0
Nursing Services	68	208	74	41	0	20	0	30	9	34
Plant Systems	0	41	0	0	0	41	0	0	0	0
Transportation Technologies Intro Courses	1	84	28	0	0	0	0	0	37	19
Welding Technologies	2	428	83	45	97	31	40	30	53	49
Total enrollment	226	3,000	651	403	641	397	121	195	318	274

Table 5 (continued)

JTED: Northern Arizona Vocational Institute of Technology (NAVIT)

CTE program	JTED central enrollment	JTED member districts' total enrollment	JTED member districts' satellite enrollment										
			Blue Ridge USD	Heber-Overgaard USD	Holbrook USD	Joseph City USD	Payson USD	Round Valley USD	Show Low USD	Snowflake USD	St. Johns USD	Whiteriver USD	Winslow USD
Accounting and Related Services	0	206	206	0	0	0	0	0	0	0	0	0	0
Allied Health Intro Courses	10	85	0	0	0	0	0	0	0	0	0	0	85
Animal Systems	0	155	0	0	0	0	134	0	0	21	0	0	0
Architectural Drafting	0	28	0	0	0	0	0	0	0	0	0	0	28
Automation/Robotics	3	0	0	0	0	0	0	0	0	0	0	0	0
Automotive Collision Repair	0	45	0	0	45	0	0	0	0	0	0	0	0
Automotive Technologies	14	186	20	0	0	20	92	0	0	0	24	30	0
Business Management and Administrative Services	0	446	0	0	78	0	0	38	137	60	27	83	23
Business Operations Support and Assistant Services	0	57	6	0	0	7	0	0	0	0	0	0	44
Cabinetmaking	0	26	13	0	0	0	0	13	0	0	0	0	0
Carpentry	0	32	0	0	0	17	0	0	0	0	0	0	15
Communication Media Technology Intro Courses	0	284	71	27	4	0	0	47	45	90	0	0	0
Construction Technologies	5	166	0	13	63	4	16	0	24	26	0	20	0
Construction Technologies Intro Courses	0	375	23	12	92	2	51	34	52	50	0	35	24
Cosmetology and Related Personal Grooming Services	70	0	0	0	0	0	0	0	0	0	0	0	0
Culinary Arts	0	354	84	27	0	0	113	0	107	0	23	0	0
Digital Photography	0	234	56	0	0	0	0	118	60	0	0	0	0
Digital Printing	0	81	0	0	0	0	0	0	0	0	0	0	81
Drafting and Design Tech Intro Courses	0	39	0	0	0	0	0	0	0	0	0	0	39
Early Childhood Education	0	324	0	0	146	0	0	0	56	0	0	122	0
Electrical and Power Transmission Tech Intro Courses	8	0	0	0	0	0	0	0	0	0	0	0	0
Engineering Sciences	0	51	0	0	0	0	51	0	0	0	0	0	0
Entertainment Marketing	0	43	0	0	0	0	43	0	0	0	0	0	0
Film and TV	0	231	0	0	2	0	0	0	31	120	0	78	0
Financial Services	0	39	0	0	0	0	0	0	0	0	0	0	39
Fire Service	32	0	0	0	0	0	0	0	0	0	0	0	0
Graphic/Web Design	0	171	27	25	0	0	0	0	42	38	39	0	0
Industrial Electrician	6	0	0	0	0	0	0	0	0	0	0	0	0
Information Technology Intro Courses	0	96	16	0	5	0	32	0	0	43	0	0	0
Law, Public Safety, and Security	0	75	0	11	0	0	0	0	0	0	0	0	64
Marketing, Management, and Entrepreneurship Intro Courses	0	31	0	0	0	0	31	0	0	0	0	0	0
Mechanical Drafting	0	52	0	0	52	0	0	0	0	0	0	0	0
Medical Assisting Services	17	0	0	0	0	0	0	0	0	0	0	0	0
Natural Renewable Resources Systems	0	79	0	0	0	0	0	79	0	0	0	0	0
Network Technologies	0	71	0	0	0	0	53	0	0	18	0	0	0
Nursing Services	77	0	0	0	0	0	0	0	0	0	0	0	0
Plant Systems	0	82	0	0	0	0	0	0	0	11	0	0	71
Precision Machining	1	2	2	0	0	0	0	0	0	0	0	0	0
Precision Manufacturing Intro Courses	6	38	38	0	0	0	0	0	0	0	0	0	0
Residential Electrician	6	0	0	0	0	0	0	0	0	0	0	0	0

Table 5 (continued)

JTED: Northern Arizona Vocational Institute of Technology (NAVIT) (concluded)

CTE program	JTED central enrollment	JTED member districts' total enrollment	JTED member districts' satellite enrollment										
			Blue Ridge USD	Heber-Overgaard USD	Holbrook USD	Joseph City USD	Payson USD	Round Valley USD	Show Low USD	Snowflake USD	St. Johns USD	Whiteriver USD	Winslow USD
Software Development	0	12	0	0	12	0	0	0	0	0	0	0	0
Sports Medicine and Rehabilitation Services	0	40	0	0	0	0	0	0	0	0	0	0	40
Technical Theatre	0	52	14	0	0	0	38	0	0	0	0	0	0
Transportation Technologies Intro Courses	10	104	0	0	0	0	46	22	0	0	0	36	0
Web Page Development	0	8	8	0	0	0	0	0	0	0	0	0	0
Welding Technologies	99	174	0	0	77	6	0	57	0	0	34	0	0
Total enrollment	**364**	**4,574**	**584**	**115**	**576**	**56**	**700**	**408**	**554**	**477**	**147**	**404**	**553**

Table 5 (continued)

JTED: Pima County Joint Technical Education District (PCJTED)

CTE program	JTED central enrollment	JTED member districts' total enrollment	JTED member districts' satellite enrollment												
			Ajo USD	Amphitheater USD	Baboquivari USD	Catalina Foothills USD	Flowing Wells USD	Mammoth-San Manuel USD	Marana USD	Sahuarita USD	Santa Cruz Valley USD	Sunnyside USD	Tanque Verde USD	Tucson USD	Vail USD
Accounting and Related Services	0	117	0	0	0	0	0	0	0	0	20	0	0	97	0
Agribusiness Systems	0	188	0	0	0	0	101	0	87	0	0	0	0	0	0
Air Force JROTC	0	217	0	0	0	0	0	0	0	0	0	217	0	0	0
Aircraft Mechanics	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Allied Health Intro Courses	10	705	0	0	0	0	0	0	0	0	81	0	0	463	161
Animal Systems	30	359	0	142	0	0	0	0	0	0	0	0	0	0	217
Animation	48	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Architectural Drafting	0	93	0	47	0	0	10	0	35	0	0	0	1	0	0
Army JROTC	0	138	0	0	0	0	0	0	0	0	138	0	0	0	0
Arts Management	0	22	0	0	0	0	0	0	0	0	0	22	0	0	0
Automation/Robotics	0	36	0	0	0	0	0	0	0	36	0	0	0	0	0
Automotive Collision Repair	0	225	0	0	0	0	0	0	0	0	0	69	0	156	0
Automotive Technologies	31	1,106	0	114	0	0	72	40	382	50	0	47	0	213	188
Bioscience	0	1,795	0	307	0	257	193	0	643	0	0	66	0	259	70
Business Management and Administrative Services	0	690	0	0	0	0	0	0	0	0	137	82	0	404	67
Business Operations Support and Assistant Services	4	327	9	0	0	0	0	0	0	0	0	49	0	269	0
Cabinetmaking	0	61	0	0	0	0	0	61	0	0	0	0	0	0	0
Carpentry	0	22	0	0	0	0	0	22	0	0	0	0	0	0	0
Communication Media Technology Intro Courses	116	2,912	0	325	0	301	98	0	163	0	0	172	91	1,497	265
Computer Maintenance	0	73	0	0	0	0	0	0	0	0	19	40	0	14	0
Construction Technologies	0	279	0	63	0	0	0	0	45	43	0	0	0	100	28
Construction Technologies Intro Courses	0	261	0	0	0	0	0	0	0	59	0	0	0	133	69
Cosmetology and Related Personal Grooming Services	75	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Culinary Arts	356	1,584	48	406	0	0	146	0	261	137	108	133	0	345	0
Dental Assisting	0	17	0	0	0	0	0	0	17	0	0	0	0	0	0
Design and Merchandising Intro Courses	0	111	0	0	0	0	61	0	0	0	0	0	0	50	0
Diesel Engine Repair	0	147	0	147	0	0	0	0	0	0	0	0	0	0	0
Digital Communications	0	190	0	0	0	5	0	0	32	13	0	0	0	84	56
Digital Photography	0	1,219	0	63	0	26	28	0	127	239	0	156	19	353	208
Digital Printing	0	192	0	0	0	0	0	0	0	0	0	73	0	119	0
Drafting and Design Tech Intro Courses	0	273	0	0	0	0	12	0	0	0	0	115	15	131	0
Early Childhood Education	89	608	0	95	0	0	0	0	110	0	0	0	0	270	133
Education Professions	0	74	0	0	0	0	35	0	39	0	0	0	0	0	0
Electrical and Power Transmission Tech Intro Courses	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Electronic Technologies	0	172	0	0	0	0	88	0	0	0	0	0	0	84	0
Emergency Medical Services	29	145	0	0	0	0	0	0	25	0	0	120	0	0	0
Engineering Sciences	0	811	0	119	0	124	16	0	114	0	0	53	0	329	56

Table 5 (continued)

JTED: Pima County Joint Technical Education District (PCJTED) (concluded)

CTE program	JTED central enrollment	JTED member districts' total enrollment	JTED member districts' satellite enrollment												
			Ajo USD	Amphitheater USD	Baboquivari USD	Catalina Foothills USD	Flowing Wells USD	Mammoth-San Manuel USD	Marana USD	Sahuarita USD	Santa Cruz Valley USD	Sunnyside USD	Tanque Verde USD	Tucson USD	Vail USD
Entrepreneurship	0	141	5	0	1	134	0	0	0	0	0	0	1	0	0
Fashion Design and Merchandising	0	66	0	0	0	0	50	0	0	0	0	0	0	16	0
Film and TV	0	666	26	21	0	10	12	0	41	203	0	168	6	179	0
Fire Service	35	55	0	0	0	0	0	0	17	0	0	0	0	38	0
Graphic/Web Design	44	351	0	39	0	90	0	0	0	0	0	0	7	215	0
Health Information Technology	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Heating, Ventilation, and Air Conditioning	0	52	0	0	0	0	0	0	0	0	0	0	0	52	0
Hospitality Management	0	92	0	0	0	0	0	0	0	0	0	92	0	0	0
Industrial Electrician	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Information Technology Intro Courses	8	328	0	120	0	0	0	0	0	0	78	43	24	63	0
Law, Public Safety, and Security	24	835	0	0	0	0	0	0	123	112	126	261	0	147	66
Marketing, Management, and Entrepreneurship Intro Courses	0	269	10	0	12	54	0	0	0	0	0	0	33	120	40
Mechanical Drafting	0	65	0	0	0	0	0	0	0	0	0	24	0	41	0
Medical Assisting Services	34	65	0	0	0	0	0	0	0	0	0	0	0	0	65
Mental and Social Health Services	0	63	0	0	0	0	0	0	0	0	0	0	0	0	63
Music/Audio Production	0	127	0	0	0	0	0	0	46	0	0	0	0	63	18
Natural Renewable Resources Systems	0	196	0	0	0	146	0	0	0	0	0	0	0	50	0
Navy/Marine Corp JROTC	0	397	0	0	0	0	0	0	0	159	0	0	0	0	238
Network Technologies	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nursing Services	245	47	0	0	0	0	0	0	0	0	47	0	0	0	0
Pharmacy Support Services	0	16	0	0	0	0	0	0	0	0	0	0	0	16	0
Plant Systems	0	463	0	0	52	0	0	0	0	0	130	249	0	0	32
Precision Machining	69	66	0	0	0	0	0	0	0	0	0	30	0	36	0
Precision Manufacturing Intro Courses	0	150	0	0	0	0	0	0	0	0	0	60	0	90	0
Professional Sales and Marketing	0	516	0	138	0	0	0	0	245	0	0	83	0	50	0
Software Development	0	380	0	107	0	0	0	0	241	0	0	0	0	32	0
Sports Medicine and Rehabilitation Services	0	1,109	0	214	0	0	0	0	410	78	30	182	0	147	48
Technical Theatre	0	919	0	90	0	218	40	0	207	0	57	75	34	132	66
Transportation Technologies Intro Courses	0	689	0	0	0	0	56	0	0	0	0	156	0	477	0
Veterinary Assistant	35	34	0	0	0	0	0	0	1	0	0	0	0	0	33
Web Page Development	0	98	0	67	0	0	0	0	0	0	0	0	10	0	21
Welding Technologies	0	519	0	0	0	0	0	36	210	0	0	0	0	251	22
Total enrollment	**1,307**	**23,943**	**98**	**2,624**	**65**	**1,365**	**1,018**	**159**	**3,621**	**1,129**	**971**	**2,837**	**241**	**7,585**	**2,230**

Table 5 (continued)

JTED: Southwest Technical Education District of Yuma (STEDY)

CTE program	JTED central enrollment	JTED member districts' satellite enrollment		
		JTED member districts' total enrollment	Antelope UHSD	Yuma UHSD
Agribusiness Systems	0	1	0	1
Animal Systems	0	51	0	51
Automotive Technologies	0	128	32	96
Business Management and Administrative Services	0	175	44	131
Business Operations Support and Assistant Services	0	630	0	630
Cabinetmaking	0	38	38	0
Communication Media Technology Intro Courses	0	140	0	140
Computer Maintenance	0	174	0	174
Construction Technologies	0	313	0	313
Culinary Arts	0	524	0	524
Digital Photography	0	400	0	400
Early Childhood Education	0	248	0	248
Education Professions	0	86	0	86
Entertainment Marketing	0	23	0	23
Entrepreneurship	0	50	0	50
Film and TV	0	38	0	38
Fire Service	0	82	0	82
Hospitality Management	0	147	0	147
Law, Public Safety, and Security	0	637	0	637
Marketing, Management, and Entrepreneurship Intro Courses	0	114	0	114
Nursing Services	0	264	0	264
Plant Systems	0	605	88	517
Sports Medicine and Rehabilitation Services	0	477	0	477
Transportation Technologies Intro Courses	0	179	0	179
Welding Technologies	0	492	0	492
Total enrollment	0	6,016	202	5,814

Table 5 (continued)

JTED: Valley Academy for Career and Technology Education (VACTE)

CTE program	JTED central enrollment	JTED member districts' satellite enrollment			
		JTED member districts' total enrollment	Camp Verde USD	Mingus UHSD	Sedona-Oak Creek Joint USD
Allied Health Intro Courses	0	31	31	0	0
Animal Systems	0	269	97	172	0
Automotive Technologies	0	110	32	78	0
Business Operations Support and Assistant Services	0	67	0	44	23
Cabinetmaking	0	14	14	0	0
Communication Media Technology Intro Courses	0	175	97	78	0
Construction Technologies Intro Courses	0	48	48	0	0
Culinary Arts	0	131	131	0	0
Digital Communications	0	61	0	0	61
Digital Photography	0	72	0	0	72
Drafting and Design Tech Intro Courses	0	46	0	46	0
Engineering Sciences	0	31	0	31	0
Film and TV	10	77	0	2	75
Fire Service	12	7	7	0	0
Graphic/Web Design	0	132	132	0	0
Mechanical Drafting	0	22	0	22	0
Music/Audio Production	0	31	31	0	0
Nursing Services	36	0	0	0	0
Sports Medicine and Rehabilitation Services	0	135	28	107	0
Technical Theatre	0	103	0	80	23
Transportation Technologies Intro Courses	0	25	25	0	0
Welding Technologies	0	66	0	66	0
Total enrollment	58	1,653	673	726	254

Table 5 (continued)

JTED: Western Arizona Vocational Education District (WAVE)

CTE program	JTED central enrollment	JTED member districts' satellite enrollment				
		JTED member districts' total enrollment	Colorado River UHSD	Kingman USD	Lake Havasu USD	Parker USD
Advertising and Public Relations	0	35	0	0	35	0
Agribusiness Systems	0	18	0	0	0	18
Air Force JROTC	0	94	94	0	0	0
Allied Health Intro Courses	0	214	79	0	135	0
Animal Systems	0	86	0	86	0	0
Architectural Drafting	0	25	0	15	10	0
Automotive Technologies	0	212	0	50	130	32
Business Management and Administrative Services	10	698	21	536	87	54
Business Operations Support and Assistant Services	0	49	49	0	0	0
Cabinetmaking	0	47	0	24	23	0
Carpentry	0	89	89	0	0	0
Communication Media Technology Intro Courses	0	331	121	210	0	0
Construction Technologies Intro Courses	0	129	37	54	38	0
Cosmetology and Related Personal Grooming Services	1	0	0	0	0	0
Culinary Arts	5	257	162	95	0	0
Design and Merchandising Intro Courses	0	16	0	16	0	0
Diesel Engine Repair	1	0	0	0	0	0
Digital Communications	0	75	30	0	45	0
Digital Photography	0	30	22	8	0	0
Digital Printing	0	12	12	0	0	0
Early Childhood Education	0	190	41	80	69	0
Engineering Sciences	0	38	0	38	0	0
Fashion Design and Merchandising	0	98	0	0	98	0
Financial Services	0	13	13	0	0	0
Fire Service	14	98	63	35	0	0
Graphic/Web Design	5	289	16	43	147	83
Heating, Ventilation, and Air Conditioning	1	0	0	0	0	0
Hospitality Management	0	60	0	0	0	60
Information Technology Intro Courses	3	30	30	0	0	0
Law, Public Safety, and Security	3	105	83	5	0	17
Mechanical Drafting	0	12	0	12	0	0
Music/Audio Production	0	66	1	0	65	0
Network Technologies	3	2	0	2	0	0
Nursing Services	37	177	4	173	0	0
Plant Systems	0	36	0	0	0	36
Software Development	1	114	60	0	54	0
Sports Medicine and Rehabilitation Services	0	164	41	97	26	0
Technical Theatre	0	314	0	215	99	0
Web Page Development	1	3	0	0	3	0
Welding Technologies	14	112	73	3	0	36
Total enrollment	99	4,338	1,141	1,797	1,064	336

Table 5 (continued)

JTED: Western Maricopa Education Center (West-MEC)

CTE program	JTED central enrollment	JTED member districts' total enrollment	JTED member districts' satellite enrollment									
			Agua Fria UHSD	Buckeye UHSD	Deer Valley USD	Dysart USD	Glendale UHSD	Paradise Valley USD	Peoria USD	Saddle Mountain USD	Tolleson UHSD	Wickenburg USD
Accounting and Related Services	0	490	0	0	59	0	185	0	246	0	0	0
Agribusiness Systems	0	171	0	118	0	0	0	0	0	53	0	0
Air Force JROTC	0	196	0	0	0	0	0	0	196	0	0	0
Aircraft Mechanics	55	0	0	0	0	0	0	0	0	0	0	0
Allied Health Intro Courses	43	2,080	0	83	396	621	0	0	314	0	666	0
Animation	0	169	0	0	0	169	0	0	0	0	0	0
Architectural Drafting	0	334	0	43	43	164	74	10	0	0	0	0
Automotive Collision Repair	17	0	0	0	0	0	0	0	0	0	0	0
Automotive Technologies	89	511	0	64	0	76	0	187	157	0	27	0
Bioscience	0	254	0	0	97	0	83	74	0	0	0	0
Business Management and Administrative Services	0	509	0	183	0	0	0	67	169	45	0	45
Business Operations Support and Assistant Services	0	487	0	0	49	0	284	0	0	0	154	0
Cabinetmaking	0	447	0	80	0	0	224	143	0	0	0	0
Carpentry	0	9	0	0	0	0	0	0	0	0	9	0
Communication Media Technology Intro Courses	0	1,162	0	0	5	678	0	0	425	29	0	25
Computer Maintenance	0	69	28	0	0	0	0	37	4	0	0	0
Construction Technologies	3	235	69	0	0	0	0	0	123	23	0	20
Construction Technologies Intro Courses	1	495	0	0	0	0	0	0	285	45	106	59
Cosmetology and Related Personal Grooming Services	429	0	0	0	0	0	0	0	0	0	0	0
Culinary Arts	0	6,302	180	280	308	441	1,412	1,103	1,247	0	1,207	124
Design and Merchandising Intro Courses	0	91	0	0	0	0	0	0	50	0	41	0
Diesel Engine Repair	24	0	0	0	0	0	0	0	0	0	0	0
Digital Communications	0	261	0	69	0	56	49	71	0	0	16	0
Digital Photography	0	1,863	0	34	0	135	915	627	0	0	131	21
Digital Printing	0	105	0	0	0	0	90	0	0	0	15	0
Drafting and Design Tech Intro Courses	0	458	0	80	0	0	378	0	0	0	0	0
Early Childhood Education	0	2,048	109	116	303	0	372	149	683	0	316	0
Education Professions	0	240	0	0	31	0	66	127	16	0	0	0
Electronic Technologies	22	0	0	0	0	0	0	0	0	0	0	0
Emergency Medical Services	74	0	0	0	0	0	0	0	0	0	0	0
Engineering Sciences	0	2,158	142	0	369	273	468	249	525	0	96	36
Entertainment Marketing	0	206	0	0	79	0	0	0	127	0	0	0
Entrepreneurship	0	1,091	0	0	361	309	0	393	0	0	28	0
Fashion Design and Merchandising	0	68	0	0	0	0	0	30	28	0	10	0
Film and TV	0	2,162	374	35	576	95	602	128	352	0	0	0
Financial Services	0	143	0	0	0	0	0	0	24	0	119	0
Fire Service	98	221	0	0	0	119	52	0	50	0	0	0
Graphic/Web Design	0	1,621	292	43	795	247	0	222	0	22	0	0
Heating, Ventilation, and Air Conditioning	12	0	0	0	0	0	0	0	0	0	0	0
Hospitality Management	0	231	0	0	75	0	156	0	0	0	0	0
Information Technology Intro Courses	17	648	0	0	0	0	0	10	349	0	289	0

Table 5 (continued)

JTED: Western Maricopa Education Center (West-MEC) (concluded)

CTE program	JTED central enrollment	JTED member districts' total enrollment	JTED member districts' satellite enrollment									
			Agua Fria UHSD	Buckeye UHSD	Deer Valley USD	Dysart USD	Glendale UHSD	Paradise Valley USD	Peoria USD	Saddle Mountain USD	Tolleson UHSD	Wickenburg USD
Interior Design and Merchandising	0	189	69	0	120	0	0	0	0	0	0	0
Laboratory Assisting	4	126	0	0	0	126	0	0	0	0	0	0
Law, Public Safety, and Security	0	971	51	26	25	142	26	222	479	0	0	0
Marketing, Management, and Entrepreneurship Intro Courses	0	757	0	0	9	198	0	0	392	0	158	0
Mechanical Drafting	0	30	0	0	0	0	30	0	0	0	0	0
Medical Assisting Services	56	189	0	0	0	0	0	0	189	0	0	0
Music/Audio Production	0	28	0	0	0	0	0	28	0	0	0	0
Navy/Marine Corp JROTC	0	296	0	0	0	0	296	0	0	0	0	0
Network Technologies	0	69	0	0	0	0	34	7	28	0	0	0
Nursing Services	0	406	0	0	139	0	152	55	60	0	0	0
Pharmacy Support Services	27	0	0	0	0	0	0	0	0	0	0	0
Plant Systems	0	470	149	0	0	0	0	0	321	0	0	0
Precision Machining	10	42	0	30	0	0	0	12	0	0	0	0
Precision Manufacturing Intro Courses	5	30	0	30	0	0	0	0	0	0	0	0
Professional Sales and Marketing	0	1,837	160	0	0	130	1,478	0	69	0	0	0
Software Development	24	363	0	15	31	0	0	93	168	0	56	0
Sports Medicine and Rehabilitation Services	0	1,892	467	130	111	309	0	0	605	0	270	0
Technical Theatre	0	180	0	54	29	0	97	0	0	0	0	0
Transportation Technologies Intro Courses	43	355	0	14	0	44	0	0	231	0	66	0
Veterinary Assistant	84	0	0	0	0	0	0	0	0	0	0	0
Web Page Development	0	482	27	0	441	0	0	0	0	0	14	0
Welding Technologies	37	458	0	60	0	0	72	135	39	0	152	0
Total enrollment	**1,174**	**36,705**	**2,117**	**1,587**	**4,451**	**4,332**	**7,595**	**4,179**	**7,951**	**217**	**3,946**	**330**

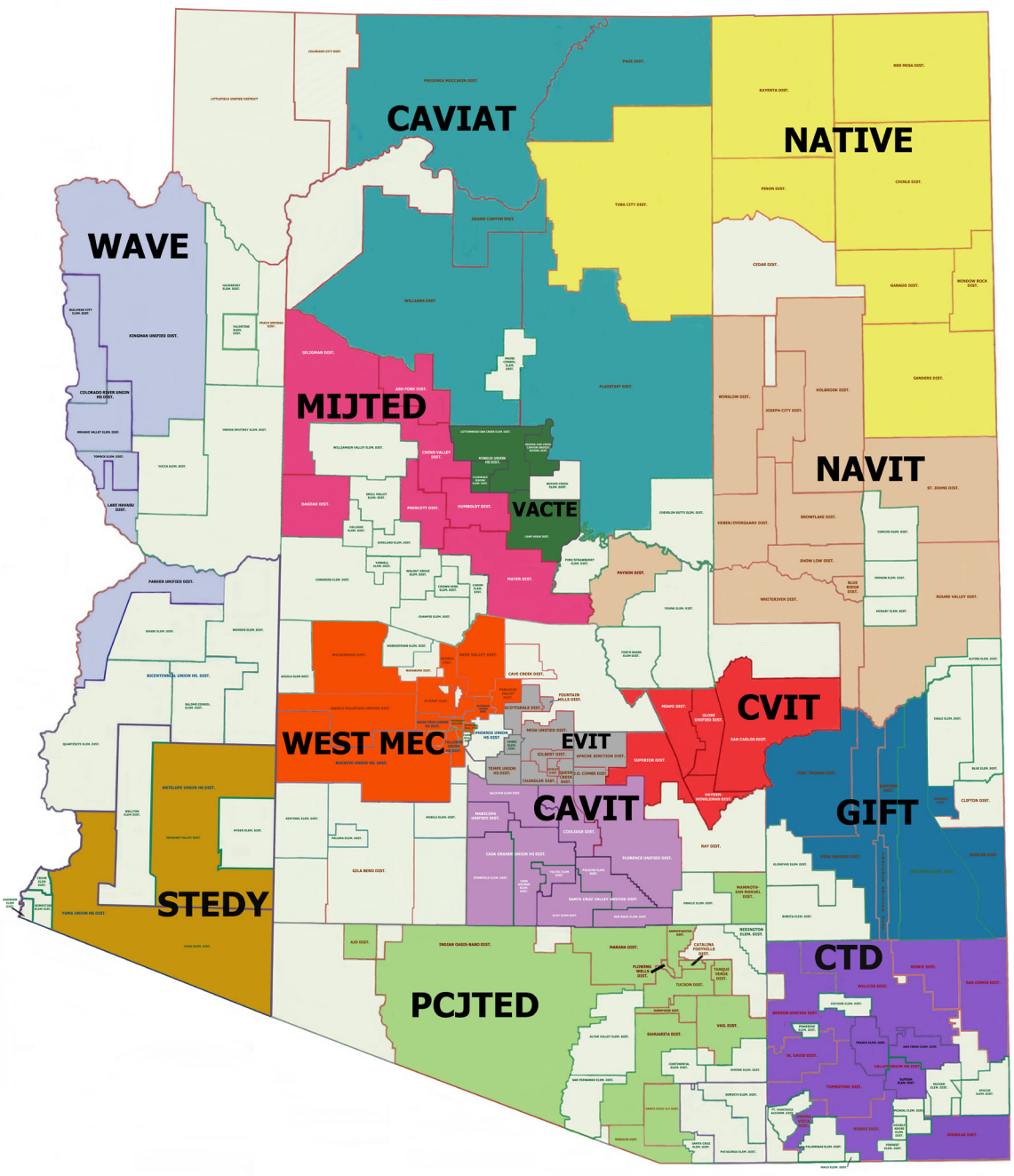
Table 5 (concluded)

Non-JTED districts

CTE program	Total enrollment	Bicentennial UHSD	Cave Creek USD	Colorado City USD	Nogales USD	Phoenix UHSD
Accounting and Related Services	444	0	0	0	0	444
Architectural Drafting	87	0	0	0	0	87
Automation/Robotics	186	0	0	0	0	186
Automotive Collision Repair	94	0	0	0	0	94
Automotive Technologies	372	0	0	0	108	264
Business Management and Administrative Services	659	0	167	42	407	43
Business Operations Support and Assistant Services	930	20	0	0	0	910
Cabinetmaking	83	0	0	0	83	0
Communication Media Technology Intro Courses	20	0	20	0	0	0
Computer Maintenance	95	0	0	0	25	70
Construction Technologies	241	4	0	0	0	237
Construction Technologies Intro Courses	20	10	0	10	0	0
Cosmetology and Related Personal Grooming Services	58	0	0	0	0	58
Culinary Arts	1,271	17	0	0	134	1,120
Digital Communications	165	0	56	0	0	109
Digital Photography	7	7	0	0	0	0
Early Childhood Education	992	0	0	0	44	948
Education Professions	21	0	0	0	0	21
Engineering Sciences	181	0	0	0	0	181
Entertainment Marketing	137	0	0	0	0	137
Entrepreneurship	180	0	98	0	0	82
Fashion Design and Merchandising	292	0	0	0	67	225
Film and TV	152	0	95	0	0	57
Financial Services	194	0	87	0	0	107
Fire Service	64	0	0	0	0	64
Graphic/Web Design	190	0	0	0	65	125
Information Technology Intro Courses	143	0	0	0	143	0
Law, Public Safety, and Security	84	0	0	0	0	84
Marketing, Management, and Entrepreneurship Intro Courses	57	0	57	0	0	0
Mechanical Drafting	45	0	0	0	0	45
Network Technologies	32	0	0	0	32	0
Nursing Services	116	0	0	0	38	78
Pharmacy Support Services	35	0	0	0	0	35
Professional Sales and Marketing	604	0	12	0	0	592
Software Development	130	0	0	0	0	130
Web Page Development	26	0	0	0	0	26
Total enrollment	**8,407**	**58**	**592**	**52**	**1,146**	**6,559**

Source: Auditor General staff analysis of fiscal year 2016 district-reported duplicated CTE course enrollment data.

Figure 8
Map of Arizona's joint technical education districts



Source: Map courtesy of Valley Academy for Career and Technology Education (VACTE), September 2017.

Methodology

Auditors used various methods to address the audit's objectives, including interviewing joint technical education district (JTED) superintendents, district career and technical education (CTE) directors, CTE teachers, and staff; reviewing applicable state and federal laws and guidance; and reviewing information presented on state and federal websites related to JTEDs and their programs. Auditors also used the following specific methods to address the audit's objectives:

- To provide background information on CTE and JTEDs, auditors interviewed Arizona Department of Education (ADE) and district staff, reviewed state and federal laws and guidance, and analyzed district-reported student enrollment data and fiscal year 2016 district-provided accounting data.

- To select a sample of JTEDs, JTED member districts, non-JTED school districts, and JTED programs to review, auditors judgmentally selected a group of JTEDs that would encompass a substantial proportion of fiscal year 2016 state-wide enrollment in JTED programs, would have substantial enrollment in both the central and satellite models, and would include both urban and rural districts. Auditors then selected programs with high enrollment and frequent offering, both statewide and among the sample JTEDs. Finally, auditors selected specific JTED campuses, member district high schools from the sample JTEDs, and high schools from school districts that were not part of a JTED that broadly represented the sample JTED programs selected. See Table 6 on page d-2 for a listing of districts and programs sampled.

- To assess the growth in JTED satellite campus programs compared to JTED central campus programs, auditors reviewed ADE student membership data for fiscal years 2006 through 2016 and district-reported duplicated student enrollment data for fiscal years 2011 through 2016 and interviewed district staff.

- To assess the delivery of CTE, auditors reviewed fiscal year 2016 district-reported student enrollment and CTE course data. Auditors also compared fiscal year 2016 graduation data for students who completed two CTE courses in a program, otherwise known as program concentrators, across all three CTE models. Additionally, auditors interviewed 80 CTE teachers and visited 79 CTE classes from the central, satellite, and non-JTED models and reviewed teachers' personnel files.

- To evaluate the amount and quality of equipment used for CTE programs, auditors reviewed CTE equipment lists from ADE for the eight sample programs and toured the CTE facilities for a sample of JTEDs, member districts, and non-JTED districts.

- To evaluate the opportunities students had to earn industry certifications and college credit at the districts and in the programs sampled, auditors reviewed data from those districts that tracked how many of their students earned college credits, interviewed CTE teachers and other district officials, reviewed fiscal year 2016 intergovernmental agreements (IGAs) between JTEDs and community colleges, reviewed CTE course descriptions, and reviewed information from district and community college websites. Auditors could not perform a detailed analysis of industry certifications or college credits earned because JTEDs, member districts, and non-JTED districts did not consistently track this information.

- To identify duplication of JTED programs, auditors reviewed fiscal year 2016 district-reported student enrollment data for CTE courses offered at two or more high schools within a member district or between a member district and JTED. Auditors then compared average class sizes to estimate opportunities to consolidate duplicated programs within a member district and between member districts and their JTEDs.

Table 6
Districts and CTE programs sampled for JTED special audit

	Automotive Technologies	Business Management and Administrative Services	Culinary Arts	Engineering Sciences	Film and TV	Nursing Services	Plant Systems	Welding Technologies
JTED and member districts								
East Valley Institute of Technology (EVIT)								
EVIT—Main campus	✓		✓	✓	✓	✓		✓
Higley USD—Higley HS				✓	✓			
Mesa USD—Red Mountain HS	✓		✓					✓
Mesa USD—Westwood HS	✓		✓					✓
Mountain Institute Joint Technical Education District (MIJTED)								
MIJTED—Yavapai College - Career and Technical Education Center	✓			✓				✓
MIJTED—Yavapai College - Main campus						✓		
MIJTED—Culinary Arts campus			✓					
Humboldt USD—Bradshaw Mountain HS					✓	✓		
Mayer USD—Mayer HS		✓					✓	
Prescott USD—Prescott HS	✓	✓						
Northern Arizona Vocational Institute of Technology (NAVIT)								
NAVIT—Northland Pioneer College - Show Low campus	✓					✓		✓
Snowflake USD—Snowflake HS		✓			✓		✓	
Winslow USD—Winslow HS		✓					✓	
Pima County Joint Technical Education District (PCJTED)								
PCJTED—Master Pieces campus						✓		
PCJTED—Santa Rita HS			✓					
Catalina Foothills USD—Catalina Foothills HS				✓	✓			
Santa Cruz Valley USD—Rio Rico HS			✓			✓	✓	
Sunnyside USD—Sunnyside HS	✓	✓			✓			
Tucson USD—Tucson Magnet HS	✓				✓			✓
Western Maricopa Education Center (West-MEC)								
West-MEC—Central campus								✓
West-MEC—Northeast campus	✓							
Glendale UHSD—Cortez HS			✓					✓
Glendale UHSD—Moon Valley HS			✓		✓	✓		
Peoria USD—Peoria HS				✓			✓	✓
Peoria USD—Sunrise Mountain HS	✓			✓		✓		
Non-JTED districts[1]								
Cave Creek USD—Cactus Shadows HS		✓			✓			
Nogales USD—Nogales HS	✓	✓	✓					
Phoenix UHSD—Cesar Chavez HS			✓	✓				
Phoenix UHSD—Metro Tech HS	✓		✓		✓	✓		

[1] Non-JTED districts are those districts that offer career and technical education but are not part of a JTED.

Source: Auditor General staff selection of districts offering CTE in fiscal year 2016 based on enrollment, program offerings, and district location.

- To evaluate the variety of JTED programs offered at JTED central campuses, member districts' satellite campuses, and non-JTED campuses, auditors reviewed fiscal year 2016 district-reported student enrollment data for CTE courses offered by the JTEDs and all of their member districts. Auditors then reviewed the impact of district location on the program offerings of JTEDs and member districts. District location information was obtained from the National Center for Education Statistics' fiscal year 2015 urban-centric locale codes that use geocoding and population information to assign a designation based on proximity to population clusters.

- To evaluate the scope of the eight sample JTED programs across the sample JTEDs and member districts, auditors reviewed course descriptions provided by each of the sample JTEDs and member districts. Auditors also interviewed CTE teachers for additional details about the programs they teach.

- To assess the sample JTEDs' financial accounting data, auditors scanned payroll transactions for 30 individuals from each JTED, or all individuals if the JTED employed fewer than 30 individuals, who received payments in fiscal year 2016 through the JTED's payroll system and 30 fiscal year 2016 accounts payable transactions from each JTED for proper account classification and reasonableness. No improper transactions were identified. Auditors also evaluated other internal controls that they considered significant to the audit objectives and reviewed and evaluated fiscal year 2016 costs by category, funding source, functional area, and district.

- To evaluate the efficiency of JTED practices, including ways districts help increase the access to, awareness of, and quality of CTE, auditors interviewed JTED, member district, and non-JTED district staff about their practices and reviewed supporting documentation districts provided related to these practices.

- To calculate the proportion of satellite funding JTEDs allocated to member districts, auditors reviewed fiscal year 2016 budget worksheets and associated average daily membership (ADM) counts and fiscal year 2016 district-reported detailed accounting data. For this calculation, auditors used final ADM counts and the final fiscal year 2016 base support level amounts to determine the equalization base each JTED should have received. For each sample JTED, auditors divided the total allocation amount by the equalization base attributable to satellite ADM. Auditors also reviewed fiscal year 2016 IGAs between the JTEDs and member districts in the audit sample and interviewed district staff.

- To examine the relationship between JTEDs and member districts and services provided to member districts, auditors reviewed sample JTEDs' fiscal year 2016 district-reported detailed accounting data and IGAs with member districts. Additionally, auditors interviewed member district CTE staff to identify areas of JTED-provided services that were not included in the IGAs.

- To determine how JTEDs spent Classroom Site Fund monies, auditors reviewed all JTEDs' annual financial reports and district-reported detailed accounting data from fiscal year 2016.

The Auditor General and her staff express their appreciation to the JTEDs', JTED member districts', and non-JTED districts' board members, superintendents, and staff and ADE staff for their cooperation and assistance throughout the audit.


ARIZONA
Auditor General
Making a Positive Difference