Research Report

Career and Technical Education in Arkansas's K-12 Schools

July 19, 2016

Prepared for

THE HOUSE INTERIM COMMITTEE ON EDUCATION
AND THE SENATE INTERIM COMMITTEE ON EDUCATION

2015-16 Adequacy Study

BUREAU OF LEGISLATIVE RESEARCH
One Capitol Mall, 5TH Floor | Little Rock, Ark., 72201 | (501) 682-1937

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INTRODUCTION

Arkansas law asserts that "A rigorous career and technical education program of study that links secondary education and postsecondary education and combines academic and technical education in a structured sequence of courses that progresses from broad foundation skills to occupationally specific courses shall be made available" (§ 6-5-1002(b)(1)). To this end, the Bureau of Legislative Research examined career and technical education (CTE) in the state's public K-12 schools as part of the 2016 adequacy study. The statute identifying what must be examined in the adequacy study (§ 10-3-2102) does not specifically require analysis on career and technical education. However, a report on career and technical education was requested by Education Committee members. The BLR provides this document in fulfillment of that request. This report examines the governance of CTE, the state CTE requirements for students and districts, the courses available through CTE and how CTE is funded and delivered in Arkansas.

CTE GOVERNANCE STRUCTURE

Unlike most areas of K-12 education, the Arkansas Department of Education (ADE) and the State Board of Education are not the main agency and board responsible for approving, overseeing and regulating CTE. The Arkansas Department of Career Education (ACE) and the Career Education and Workforce Development Board are responsible for supervising career and technical education.[1] Under state statute, the Board is responsible for adopting rules governing CTE programs, prescribing standards for CTE programs and teachers, approving CTE courses that districts can offer, and approving program funding. ACE is responsible for receiving and distributing federal and state funds intended to support CTE in secondary education.

State statute does require the Career Education and Workforce Development Board to coordinate with the State Board of Education "to ensure that academic, workplace, and technical skills create opportunities for a strong comprehensive education regardless of the student's ultimate career choice" (§ 25-30-104). State statute also requires the Career Education and Workforce Development Board to coordinate with the Arkansas Higher Education Coordinating Board "to ensure that secondary and postsecondary career preparation is (sic) connected to create opportunities for a strong comprehensive education regardless of the student's ultimate career choice" (§ 25-30-105(a)).

Career education hasn't always been regulated by a non-ADE agency. Act 803 of 1997 separated vocational education from the Department of Education. Before that legislation, the Vocational and Technical Education Division was part of the Department of Education. Act 803 created the State Board of Workforce Education and Career Opportunities and transferred the Division to the newly created Department of Workforce Education.

This agency-level separation has led to a somewhat muddled division of responsibilities. For example, ADE's standards assurance monitoring unit is responsible for ensuring that schools and districts are complying with the state's general educational standards (adhering to appropriate class sizes, teaching all the required courses, teachers have the appropriate licensing, etc.). To ensure compliance with CTE requirements, ADE checks that districts are offering the minimum number of CTE courses, while ACE checks that districts are offering the courses in the minimum number of course groupings, known as pathways. Additionally because ACE is a separate agency from ADE, the Career Education Department has not had access to the Arkansas Public School Computer Network (APSCN). This means ACE staff have had to

[1] Prior to 2015, the Career Education and Workforce Development Board was known as the State Board of Career Education. Act 892 of 2015 renamed the board.

rely significantly on self-reported information from districts and Secondary Career Centers rather than being able to directly access and verify expenditure and course information entered into the official finance and course management system. Act 1181 of 2015, however, specifies that "All divisions of the Department of Education and the Department of Career Education shall have access to data and other information that is submitted to the Department of Education or the Department of Career Education respectively," including information that is "maintained by a school district or public school in E-School, E-Finance, or the Arkansas Public School Computer Network."

CAREER AND TECHNICAL EDUCATION COURSES AND REQUIREMENTS

DISTRICT/SCHOOL ACCREDITATION REQUIREMENTS

Under the Arkansas Department of Education's Rules Governing Standards for Accreditation of Arkansas Public Schools and School Districts, schools that serve students in grades 9 through 12 are required to teach nine units of career and technical education (CTE).[2]

The nine CTE courses districts are required to teach must represent at least three of the following 16 occupational areas, or career clusters.[3][4]

1. Agriculture, Food & Nature Resources
2. Architecture & Construction
3. Arts, A/V Technology & Communications
4. Business, Management & Administration
5. Education & Training
6. Finance
7. Government & Public Administration
8. Health Science
9. Hospitality & Tourism
10. Human Services (including early childhood development, family and consumer sciences and cosmetology)
11. Information Technology
12. Law, Public Safety, Corrections & Security
13. Manufacturing
14. Marketing, Sales, & Service
15. Science Technology, Engineering, & Mathematics
16. Transportation, Distribution & Logistics

The career clusters mirror the 16 career clusters established by the nonprofit organization Advance CTE: State Leaders Connecting Learning to Work. The organization represents state leaders responsible for secondary and postsecondary CTE across the country. These career clusters are recognized by the U.S. Department of Education.[5]

[2] Arkansas Department of Education, Rules Governing Standards for Accreditation of Arkansas Public Schools and School Districts, 9.03.4.11

[3] Arkansas Department of Education, Rules Governing Standards for Accreditation of Arkansas Public Schools and School Districts, 9.03.4.11

[4] Arkansas Department of Career Education, http://ace.arkansas.gov/cte/careerClusters/Pages/default.aspx

[5] U.S. Department of Education, Carl D. Perkins Career and Technical Education Act of 2006, Report to Congress on State Performance Program Year 2012-13, 2016. https://s3.amazonaws.com/PCRN/uploads/Perkins_RTC_2012-13.pdf

CTE CAREER CLUSTERS

The table below shows the number of school districts offering approved or conditionally approved programs of study in 2015-16 in each of the following career clusters.[6]

	Districts With Programs	% of All Districts
Human Services	213	91%
Information Technology	195	83%
Agriculture, Food and Natural Resources	184	79%
Health Science	146	62%
Transportation, Distribution and Logistics	106	45%
Manufacturing	101	43%
Finance	75	32%
Business, Management and Administrative Services	73	31%
Law, Public Safety, Corrections and Security	70	30%
Education and Training	61	26%
Architecture and Construction	58	25%
Arts, A/V Technology and Communications	54	23%
Hospitality and Tourism	53	23%
Marketing, Sales and Service	52	22%
Science, Technology, Engineering and Mathematics	51	22%
Government and Public Administration	36	15%

Each career cluster is divided into career pathways and further into programs of study. For example, the Agriculture, Food & Nature Resources career cluster is divided into five career pathways, including Plant Systems. Within the Plant Systems pathway, there are two programs of study: Plant Science (Biological) and Plant Systems (Horticultural). Each program of study contains a progression of courses students can complete.

Arkansas school districts offered a total of 59 programs of study in 2015-16, though individual districts typically offer only a selection of those programs of study. (A list of career clusters and the available programs of studies in each cluster can be found in the Appendix.)[7]

ADE monitors that districts offer at least the nine required CTE courses, and ACE monitors that the nine units provide programs of study in at least three occupational areas. In 2012-13 and 2013-14, one district (Hughes School District) was cited for not offering programs of study in three occupational areas. No districts were cited for this issue in 2014-15 or 2015-16.[8]

CTE COURSES

According to ADE's course code management system, there are 372 separate CTE courses districts can offer high school students. These courses include Aerospace Engineering, Beef Science, Cashier Checker, Keyboarding and Dry Cleaning I and II.[9]

Of the 245 schools that served students in all high school grades (9th through 12th) in 2014-15, the number of CTE courses the high schools offered students varied widely. Badger Academy,

[6] BLR analysis of Arkansas Department of Career Education data, 2015-16 District and Secondary Area Technical Center Accreditation Reports, https://www.dropbox.com/sh/acm2d4hy53odl9r/AAD6aLjDLwgZBJn-fLT9ELCNa/Accreditation%20Reports?dl=0

[7] Short, J., Arkansas Department of Career Education, June 28, 2016 email.

[8] Meeting with ACE officials, June 16, 2016.

[9] Arkansas Department of Education, Course Code Management System, https://adedatabeta.arkansas.gov/ccms/CourseList CTE courses for this report are defined as those with 90-95 as the second and third digit of the course code.

for example, a district conversion charter school in the Beebe School District serving as alternative learning environment (ALE) school, enrolled students in just one CTE course, while Springdale High School enrolled students in 99 CTE courses. (As part of its charter, Badger Academy has a waiver from the state requirement that it teach all of the 38 course units that every high school must teach, including the required 9 CTE course units.) On average, high schools taught about 33 CTE courses each in 2014-15. The table below shows the high schools that taught the highest and the lowest number of CTE courses in 2014-15.[10]

High Schools Teaching the LOWEST Number of CTE Courses	2014-15 # of CTE Courses
Badger Academy, Beebe	1
LISA Academy North High School, Open-Enrollment Charter	2
Premier High School of Little Rock, Open-Enrollment Charter	3
Summit School, Hot Springs	3
Belle Point Alternative Center, Fort Smith	4
KIPP Delta Collegiate High School, Open-Enrollment Charter	6
North Little Rock Academy, Open-Enrollment Charter	9
LISA Academy High, Open-Enrollment Charter	11
Academics Plus High, Open-Enrollment Charter	12

High Schools Teaching the HIGHEST Number of CTE Courses	2014-15 # of CTE Courses
Springdale High School, Springdale	99
Fayetteville High School East, Fayetteville	84
Siloam Springs High School, Siloam Springs	75
Beebe High School, Beebe	70
Bryant High School, Bryant	70
Nettleton High School, Nettleton	70
Mountain Home Career Academics, Mountain Home	68
Paragould High School, Paragould	67
Blytheville High School-A New Tech School, Blytheville	63
Searcy High School, Searcy	63

The following table shows the most popular CTE courses based on the number of students who enrolled in 2014-15. The most popular CTE course was Computerized Business Applications, which was taught in 286 schools within 226 school districts and open enrollment charter schools.

2014-15 Course	# of Students	# of Schools
Computerized Business Applications	18,893	286
Family & Consumer Sciences	13,766	266
Food & Nutrition	9,018	220
Survey of Agriculture Systems	8,572	229
Child Development	8,024	225
Parenting	7,056	203
Digital Communications I-Digital Layout and Design	5,966	216
Keystone*	5,297	24
Digital Communications II-Digital Imaging	5,239	206
Introduction to Medical Professions	4,299	168

*Keystone is a course designed to help students transition from middle school to high school. The course provides an orientation to the high school's "offerings, faculty, activities, clubs, rules and regulation" as well as activities that allow students to participate in job shadowing, career fairs, field trips to business sites, etc.[11]

A 2016 Thomas B. Fordham Institute report examining the CTE courses and outcomes of Arkansas students found that, on average, high school students took 4.9 CTE courses, and 89% took at least one CTE course while in school.[12]

[10] BLR Analysis of course data obtained from APSCN.

[11] http://ace.arkansas.gov/cte/specialPrograms/careerGuidance/keystoneCapstone/Documents/KEYSTONE%20-%20Policy%20Manual%20Statement.pdf

The following table shows the top ten courses taken by male students and those taken by female students. Most of the courses that are popular among boys are also popular among girls. However, the courses shaded in blue are those that are in one gender's top ten, but not the other's.

Top 10 CTE Courses for Males, 2014-15	Males	Top 10 CTE Courses for Females, 2014-15	Females
Computerized Business Applications	9,837	Computerized Business Applications	8,919
Survey of Agriculture Systems	5,992	Family & Consumer Sciences	8,707
Family & Consumer Sciences	5,045	Child Development	5,956
Food & Nutrition	3,738	Food & Nutrition	5,280
Agricultural Mechanics	3,425	Parenting	5,181
Digital Communications I-Digital Layout and Design	3,058	Introduction to Medical Professions	3,141
Keystone*	2,685	Digital Communications I-Digital Layout and Design	2,871
Digital Communications II-Digital Imaging	2,665	Keystone*	2,612
Driver's Education	2,241	Survey of Agriculture Systems	2,581
Agricultural Metals	2,161	Digital Communications II-Digital Imaging	2,573

*Keystone is a course designed to help students transition from middle school to high school. The course provides an orientation to the high school's "offerings, faculty, activities, clubs, rules and regulation" as well as activities that allow students to participate in job shadowing, career fairs, field trips to business sites, etc.

The following table shows the courses most dominated by female students and those most dominated by male students. This analysis excludes any courses with fewer than 100 students enrolled in the course statewide.

Female-Dominated Courses, 2014-15	Female, as % of Students	Male-Dominated Courses, 2014-15	Male, as % of Students
Cosmetology II	96%	Diesel Mechanics I	99%
Cosmetology Lab	95%	Machine Tool I	96%
Cosmetology I	94%	Non-Structural Analysis/Repair	96%
Child Care Guidance, Mgmt & Svs	93%	Welding Technology	95%
Orientation to Teaching II	85%	Gas Metal Arc Welding	95%

The following table shows the top ten courses taken by students who are eligible for a free or reduced-price lunch (FRPL) (a signifier of low household income) and the top 10 courses taken by students who are not eligible for free or reduced price lunch. Most of the courses that are popular among FRPL eligible students are also popular among students who are not eligible. However, the courses shaded in blue are those that are in one group's top ten, but not the other's.

Top 10 CTE Courses for FRPL Students, 2014-15	FRPL Eligible Students	Top 10 Courses for Non-FRPL Students, 2014-15	Non-FRPL Eligible Students
Computerized Business Applications	11,514	Computerized Business Applications	7,196
Family & Consumer Sciences	9,027	Family & Consumer Sciences	4,711
Survey of Agriculture Systems	5,216	Food & Nutrition	3,849
Food & Nutrition	5,164	Survey of Agriculture Systems	3,350
Child Development	5,000	Child Development	3,011
Parenting	4,363	Keystone*	2,862
Digital Communications I-Digital Layout and Design	3,233	Parenting	2,691

[12] Dougherty, S.M., Career and Technical Education in High School: Does It Improve Student Outcomes?, Thomas B. Fordham Institute, April 2016.

Top 10 CTE Courses for FRPL Students, 2014-15	FRPL Eligible Students	Top 10 Courses for Non-FRPL Students, 2014-15	Non-FRPL Eligible Students
Digital Communications II-Digital Imaging	2,838	Digital Communications I-Digital Layout and Design	2,687
Keystone*	2,432	Digital Communications II-Digital Imaging	2,393
Introduction to Medical Professions	2,311	Driver's Education	2,216

*Keystone is a course designed to help students transition from middle school to high school. The course provides an orientation to the high school's "offerings, faculty, activities, clubs, rules and regulation" as well as activities that allow students to participate in job shadowing, career fairs, field trips to business sites, etc.[13]

The following table shows the courses where low income students (FRPL) make up the largest percentage of enrolled students and those where non-low income students make up the largest percentage. This analysis excludes any courses with fewer than 100 students enrolled in the course statewide.

2014-15	% Low Income	2014-15	% Not Low Income
Navy JROTC I*	92%	Sports Medicine Injury Assessment	77%
Navy JROTC II*	86%	ACE Approved 1st Responder	71%
ADE Approved AVID I**	84%	Programming II	71%
Intro to Career Communications	82%	Foundations of Sports Medicine	69%
Navy JROTC III*	82%	Programming I	65%

*JROTC stands for the U.S. Army Junior Reserve Officers' Training Corps.
**AVID is a course called Advancement Via Individual Determination that was offered by only five districts in 2014-15. According to the Little Rock School District, AVID is "a college readiness system for elementary through higher education that is designed to increase school-wide learning and performance. Although AVID serves all students, the AVID elective focuses on the least served students in the academic middle."[14]

The following table shows the top ten courses taken by white students and the top 10 courses taken by students who are another race. Most CTE courses with high enrollment are popular among students regardless of race. However, the courses shaded in blue are those that are in one group's top ten, but not the other's.

Top 10 CTE Courses for White Students, 2014-15	White	Top 10 CTE Courses for Non-White Students, 2014-15	Non-White
Computerized Business Applications	12,545	Computerized Business Applications	6,243
Family & Consumer Sciences	8,341	Family & Consumer Sciences	5,418
Survey of Agriculture Systems	7,015	Food & Nutrition	3,374
Food & Nutrition	5,644	Child Development	3,218
Child Development	4,807	Parenting	2,776
Parenting	4,281	Digital Communications I-Digital Layout and Design	1,844
Digital Communications I-Digital Layout and Design	4,094	Introduction to Medical Professions	1,613
Keystone*	3,894	Survey of Agriculture Systems	1,558
Digital Communications II-Digital Imaging	3,730	Digital Communications II-Digital Imaging	1,508
Driver's Education	3,546	Keystone	1,403

*Keystone is a course designed to help students transition from middle school to high school. The course provides an orientation to the high school's "offerings, faculty, activities, clubs, rules and regulation" as well as activities that allow students to participate in job shadowing, career fairs, field trips to business sites, etc.

[14] http://www.lrsd.org/?q=content/lrsd-seeking-avid-tutors-6-schools

The following table shows the courses where white students make up the largest percentage of enrolled students and those where non-white students make up the largest percentage. This analysis excludes any courses with fewer than 100 students enrolled in the course statewide.

2014-15	% of Enrolled Students Who Are Non-White	2014-15	% of Enrolled Students Who Are White
ADE Approved AVID IV*	97%	Small Animal Science	98%
ADE Approved AVID III*	94%	Beef Science	97%
ADE Approved AVID II*	90%	ACE Approved Agriculture	94%
ADE Approved AVID I*	83%	Agricultural Apprenticeship/Work-Based Learning	94%
ACE Approved Business Education	78%	Veterinary Science	91%

*AVID is a course called Advancement Via Individual Determination that was offered by only five districts in 2014-15. According to the Little Rock School District, AVID is "a college readiness system for elementary through higher education that is designed to increase school-wide learning and performance. Although AVID serves all students, the AVID elective focuses on the least served students in the academic middle."[15]

GRADUATION REQUIREMENTS

Just as districts are required to teach CTE courses, students are required to take career courses as a component of their graduation requirements. To graduate from high school, all students are required to take six Career Focus units.[16] Career Focus credits and CTE courses are generally similar in concept. However, students can receive Career Focus credits toward their graduation requirement for courses that are not considered CTE courses. All high school students are required to work with their guidance counselor to create a "Career Development Portfolio."[17] Courses listed in this document can be counted as the student's career focus units even if they're not generally considered CTE courses. For example, if a student wants to take a foreign language, that course could be considered part of the students' Career Focus units needed for graduation if it is included in the student's Career Development Portfolio.

CTE COMPLETERS

In addition to taking CTE courses to fulfill graduation requirements, students can also focus on certain career areas leading to the completion of a CTE program of study. Students who focus on particular programs of study—those who graduate from high school having completed three units in a career pathway, including all the required core courses—are considered "completers." In 2014-15, there were 12,718 completers in Arkansas school districts, 4,107 of whom completed more than one program of study.[18] (Because open-enrollment charter schools do not receive any federal Perkins funding, they do not report the number of completers to ACE.) Completers made up about 40% of all 12th grade students that year and 43% of all graduates. Arkansas appears to be following the national trend toward increasing numbers of students taking CTE courses.

[15] http://www.lrsd.org/?q=content/lrsd-seeking-avid-tutors-6-schools

[16] Arkansas Department of Education, Rules Governing Standards for Accreditation of Arkansas Public Schools and School District, 14.01.

[17] Arkansas Department of Career Education, Program Policies and Procedures for Career and Technical Education, Seconary Programs Adult Skill Training, Section III, D.

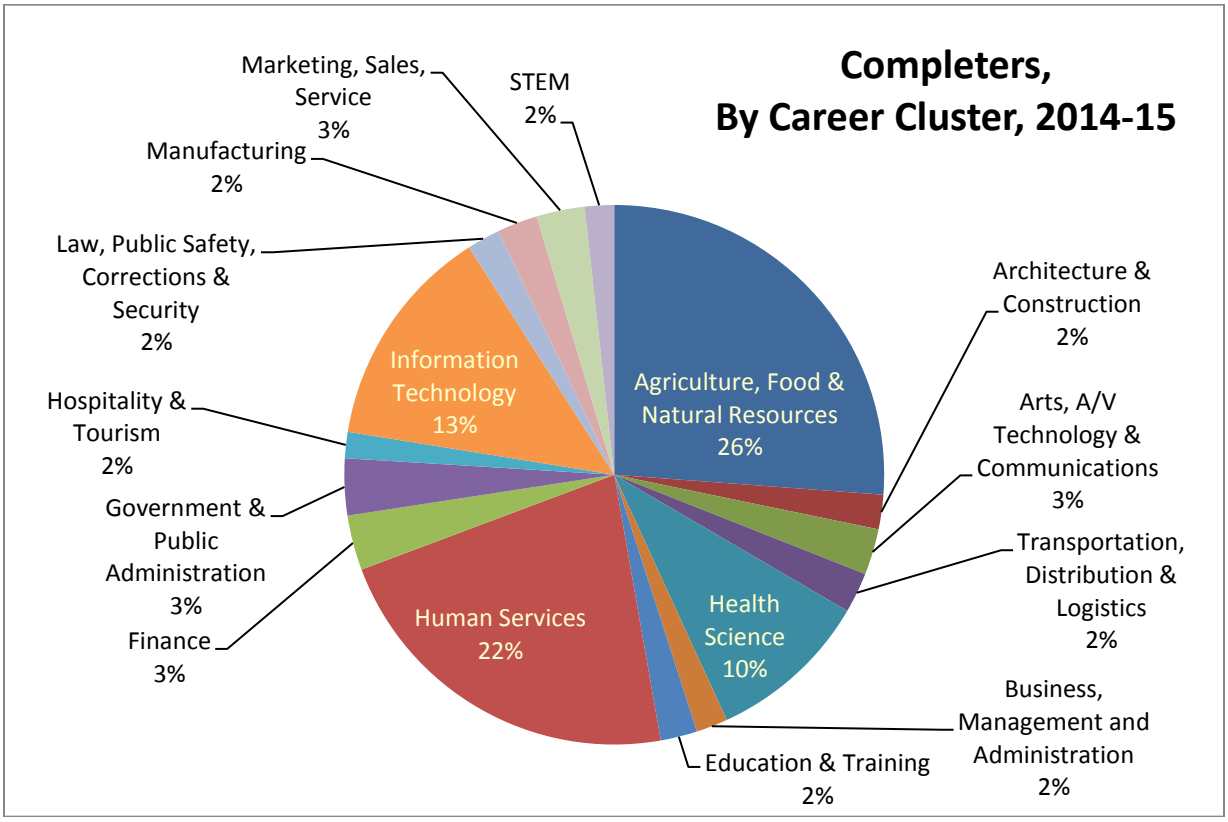
[18] Short, J., Arkansas Department of Career Education, June 13, 2016 email.

	Completers	12TH Grade Students	% of 12th Grade Students	Graduates	% of Graduates
2010-11	10,973	30,129	36%	28,722	38%
2011-12	11,729	30,090	39%	28,680	41%
2012-13	12,056	30,254	40%	29,298	41%
2013-14	12,309	31,166	39%	30,315	41%
2014-15	12,718	31,928	40%	29,916	43%

Data Source: Arkansas Department of Career Education, Arkansas Department of Education

Districts vary widely on the percentage of graduates who are completers. One district had zero completers (Lee County), while in other districts, nearly all of the graduates were reported as being completers (Bay School District and Lafayette School District, 97% each).

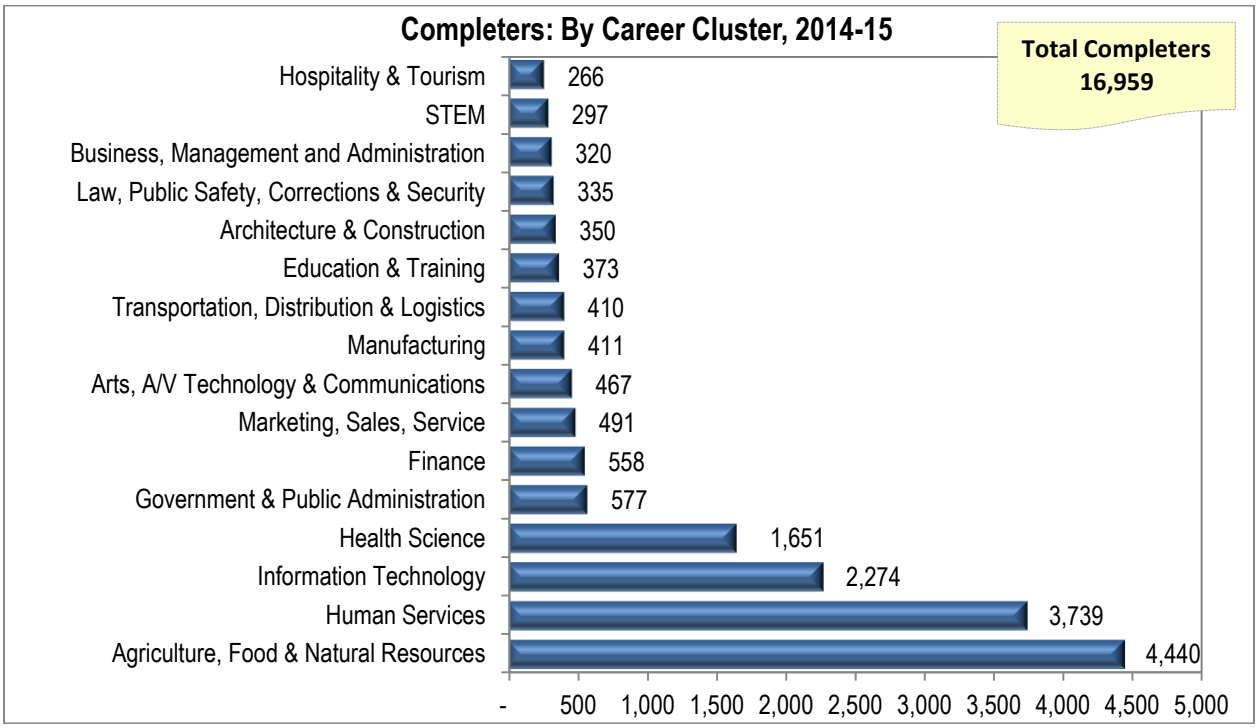
The career clusters with the most completers in 2014-15 were Agriculture, Food and Natural Resources; Human Services; Information Technology and Health Science. Nationally, the most popular programs for CTE concentrators[19] are Business Management and Administration, Arts, Audio-Visual Technology, and Communication; and Health Science.[20]



Note: Some students completed programs in more than one program of study. If a student completed more than one program, that student is listed in the chart above for each program completed.

[19] **CTE concentrators** are students who have completed at least three units of credit in a program of study. CTE concentrators are identified by ACE using APSCN enrollment records. ACE uses data on concentrators in the agency's federal reporting. **CTE completers** are students who have completed at least three units of credit in a program of study *and* graduated from high school. The CTE completers are identified locally by the high school, which then self-reports the number of completers to ACE.

[20] U.S. Department of Education, Carl D. Perkins Career and Technical Education Act of 2006, Report to Congress on State Performance Program Year 2012-13, 2016. https://s3.amazonaws.com/PCRN/uploads/Perkins_RTC_2012-13.pdf



Note: Some students completed programs in more than one program of study. If a student completed more than one program, that student is listed in the chart above for each program completed.

This distribution of program of study completions is somewhat misaligned with the occupations projected to have the largest employment growth through 2022, according to the Arkansas Department of Workforce Services.[21] The following table shows the 20 jobs that are projected to be the fastest growing in Arkansas, which are then consolidated into their occupational classifications. The Food Preparation and Serving-Related Occupations are expected to add the highest number of jobs between 2012 and 2022, but hospitality and tourism is the least popular career cluster among students who completed a program of study. Agriculture, Food & Natural Resources is the most popular program among completers, but none of the "Farming, Fishing and Forestry Occupations" were listed among the top 20 growth occupations. That said, "Healthcare Practitioners and Technical Occupations" (nurses) and "Health Care Support Occupations" (nursing assistants and home health aides), when combined, make up a major job growth area for the state, and Health Science is a somewhat popular career cluster among CTE completers.

Occupational Classification	Net Projected Job Growth
Food Preparation and Serving Related Occupations	16,263
Personal Care and Service Occupations	8,610
Office and Administrative Support Occupations	6,807
Healthcare Practitioners and Technical Occupations	5,954
Healthcare Support Occupations	5,799
Transportation and Material Moving Occupations	5,102
Sales and Related Occupations	3,505
Building and Grounds Cleaning and Maintenance Occupations	2,220
Education Training and Library Occupations	1,722
Management Occupations	1,661

[21] Arkansas Department of Workforce Services, Growth Occupations in Arkansas thru 2022, http://www.discoverarkansas.net/article.asp?PAGEID=4&SUBID=122&ARTICLEID=1111&SEGMENTID=0

CTE DELIVERY

School districts can offer career and technical courses in two ways.

- They can offer the courses on their own campus, using their own teachers or online digital learning courses, or
- They can send students to the closest Secondary Area Career Center.

Districts may offer some courses on their own campus and send students to Career Centers for others. Career centers draw students from multiple high schools, allowing them to provide high-cost career and technical programs. Districts that choose to send students to Career Centers may do so for several reasons. First, the Career Center may offer programs that require expensive equipment, such as automotive lifts, that can be purchased more easily by a center serving multiple districts than by a single district. Additionally, when students receive CTE instruction in a Career Center, districts receive funding to pay for this instruction. When students take their CTE courses on their own campus (not in a Career Center), districts receive no additional funds to provide this instruction and must rely other operational funds, such as foundation funding to pay for staff. (For more information about the Career Center funding, see page 14). Because some Career Centers are sponsored by two-year higher education institutions, students may be eligible to earn concurrent credit or industry certifications upon completion.

While there may be a financial incentive to send students to a Career Center for their CTE courses, many districts choose to offer some CTE courses on their own campus. That's because sending students to a Career Center can take significant time from and disruption in a student's daily schedule simply for transportation to and from the Center. In addition to the time, transportation also may pose a significant cost to districts. Also, on-campus student organizations related to CTE courses (e.g., Future Farmers of America) may be stronger and more active if students are associated with a single staff member on their high school campus than a variety of instructors on a two-year college campus. And finally some CTE courses do not require expensive equipment and can be easily taught in student home high schools.

The table on the following page shows the number of districts approved in 2015-16 to offer each program of study on their own campus and the number approved to offer each program of study through their local Career Center. The programs of study that districts most frequently offer on their own campus are:

- Family & Consumer Sciences Education
- Digital Communications
- Agricultural Power, Structural and Technical Systems

The programs of study districts most frequently offer through Career Centers are:

- Health Science Technology Education
- Welding
- Automotive Service Technology[22]

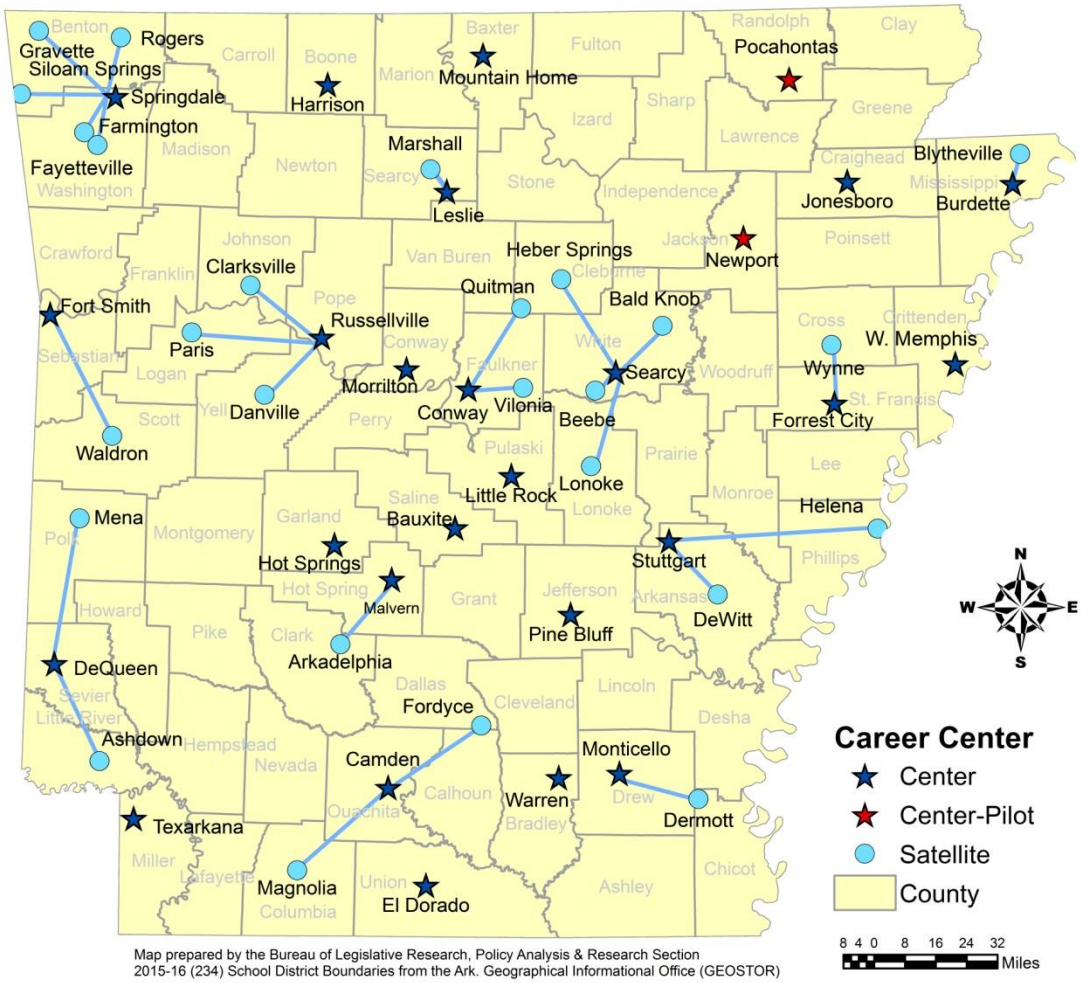
[22] BLR analysis of Arkansas Department of Career Education data, 2015-16 District and Secondary Area Technical Center Accreditation Reports, https://www.dropbox.com/sh/acm2d4hy53odl9r/AAD6aLjDLwgZBJn-fLT9ELCNa/Accreditation%20Reports?dl=0

Program of Study	Number of Districts With Approved Programs of Study	
	On Campus	Through Career Centers
Accounting	33	
Advanced Manufacturing	1	3
Advertising and Graphic Design	5	13
Agribusiness Systems	33	1
Agricultural Power, Structural & Technical Systems	167	
Animal Systems	130	
Audio-Video Technology & Film	15	
Automotive Collision Repair		39
Automotive Service Technology	9	68
Aviation		12
Banking Services	19	2
Biomedical Sciences	8	
Business Finance	14	1
Child Care Guidance, Management & Services	37	
Computer Engineering	5	27
Construction Technology	22	19
Consumer Services	6	
Cosmetology	3	56
Criminal Justice	10	60
Culinary Arts	5	14
Diesel Mechanics		8
Digital Communications	180	1
Drafting & Design - Architectural CAD	10	17
Drafting & Design - Engineering CAD	4	1
Education & Training	50	15
Electronics		7
Entrepreneurship	24	1
Family & Consumer Sciences Education	204	
Food Production, Management, & Services	11	8
Furniture Manufacturing	6	5
Graphic Communication	1	7
Health Informatics	4	
Health Science Technology Education	27	123
Hospitality	21	
Industrial Equipment Maintenance	2	2
Insurance & Risk Management	21	
JROTC	36	
Machine Tool Technology	1	18
Management	27	
Marketing Technology & Research	35	
Mobile Application Development	10	
Natural Resources/Environmental Service Systems	51	
Office Administration	48	1
Photography	10	
Plant Systems - Biological	33	
Plant Systems - Horticulture	51	
Power Equipment Technology		5
Pre-Engineering	26	15
Programming	7	
Radio Broadcasting	3	2
Securities and Investments	12	
Sports Medicine	12	

Program of Study	Number of Districts With Approved Programs of Study	
	On Campus	Through Career Centers
Television Production	18	
Web Design	9	
Welding	3	79

SECONDARY AREA CAREER CENTERS

Secondary Area Career Centers were first created in 1985 with the passage of Act 788. Called "secondary vocational centers" or "multidistrict vocational centers" in statute (and Secondary Technical Centers in rule), these centers are typically sponsored by high schools or two-year colleges (although one center is sponsored by an education service cooperative and another is sponsored by a technical institute). There are currently 25 Career Centers with 26 satellite locations designed to serve high school students within a defined geographical region. In May 2016, the Career Education and Workforce Development Board approved two new pilot centers: the Black River Technical College in Pocahontas and Arkansas State University in Newport.



Data Source: Arkansas Department of Career Education. Map is a recreation of an ACE-developed map.

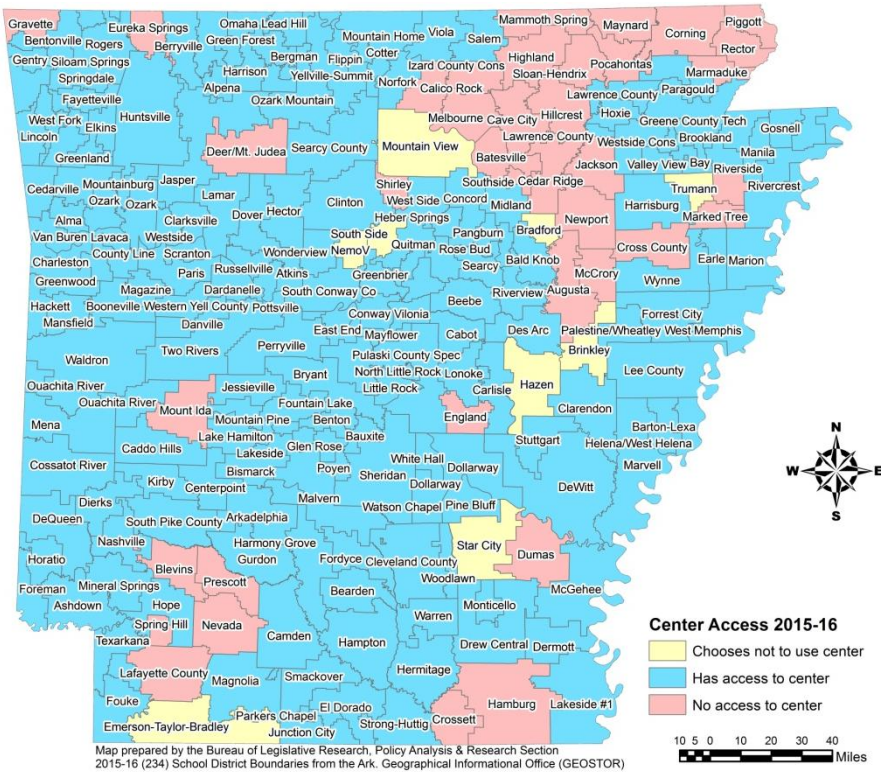
The purposes of the centers as specified in statute are:

1. "Support economic, industrial, and employment development efforts;
2. Provide equity and substantially equal access to quality vocational programs; and
3. Improve school programs to assist schools in meeting accreditation standards" (§6-51-302(a)).

To be approved as a Career Center, a sponsoring institution must:

- Offer three occupation-specific programs in the first three years and six programs of study in at least five career clusters by the beginning of the fourth year.
- Serve multiple high schools.
- Not be located within 25 miles of an existing center, unless the new center will not adversely affect neighboring centers.[23]

In 2014-15, 178 school districts and one open enrollment charter school sent nearly 3,353 full-time equivalent students to secondary Career Centers for courses.[24] In 2015-16, there were 39 districts that did not have access to a Career Center, which ACE defines as having no Career Centers within 25 miles. Nine districts had access to a Career Center but chose not to use it, according to ACE[25]. Of the 11 open enrollment charter schools that served any 9th through 12th grade students in 2014-15, just one used a Career Center. In 2016-17, Gravette will gain access, when a satellite center opens there,[26] and the two pilot centers in Pocahontas and Newport will open access to a number of districts in the northeast part of the state.



Data Source: Arkansas Department of Career Education

[23] Arkansas Department of Career Education, Special Policies and Procedures for Secondary Technical Centers, Section I A, 2-4.
[24] Swicegood, M., Arkansas Department of Career Education, June 28, 2016 email.
[25] Swicegood, M., Arkansas Department of Career Education, June 28, 2016 email.
[26] McGill, P., Arkansas Department of Career Education, June 30, 2016 email.

Currently, the Career Centers collectively offer 31 different programs of study, though each Career Center and satellite offers between 1 and 10 programs of study. The programs of study that Career Centers most frequently offer are Health Science Technology Education, Welding, Cosmetology, and Criminal Justice.[27]

Program of Study	# of Career Centers or Satellites Offering Program
Health Science Technology Education	30
Welding	19
Cosmetology	14
Criminal Justice	14
Automotive Service Technology	13
Automotive Collision Repair	10
Computer Engineering	7
Construction Technology	5
Drafting & Design - Architectural CAD	5
Machine Tool Technology	5
Aviation	3
Culinary Arts	3
Pre-Engineering	3
Advertising and Graphic Design	2
Diesel Mechanics	2
Education & Training	2
Food Production, Management, & Services	2
Graphic Communication	2
Power Equipment Technology	2
Radio Broadcasting	2
Advanced Manufacturing	1
Agribusiness Systems	1
Banking Services	1
Business Finance	1
Digital Communications	1
Drafting & Design - Engineering CAD	1
Electronics	1
Entrepreneurship	1
Furniture Manufacturing	1
Industrial Equipment Maintenance	1
Office Administration	1

CTE FUNDING

Districts and charter schools receive funding for career and technical education in three main ways:

- Foundation Funding
- Vocational Center Aid and Vocational Start-Up Grants
- Federal Perkins Funding

[27] BLR analysis of Arkansas Department of Career Education data, 2015-16 District and Secondary Area Technical Center Accreditation Reports, https://www.dropbox.com/sh/acm2d4hy53odl9r/AAD6aLjDLwgZBJn-fLT9ELCNa/Accreditation%20Reports?dl=0

FOUNDATION FUNDING

Every school district and charter school receives foundation funding based on a statutorily set per-student rate ($6,521 in 2014-15 and $6,584 in 2015-16). The per-student rate is based on a formula of the resources schools need (teachers, instructional materials, etc.) in order to provide an adequate education. The funding formula is known as the matrix. There is not component in the matrix that provides funding specifically for CTE. However the matrix does include funding for elective (non-core) teachers ($522.72 per student for 2014-15) and for instructional materials generally ($183.10 per student). The matrix does not specify how much of these resources are intended for CTE. For example, the funding for non-core teachers is meant to cover CTE teachers in high schools as well as physical education, art and music teachers in the elementary grades.

VOCATIONAL CENTER AID AND VOCATIONAL START-UP GRANTS

VOCATIONAL CENTER AID

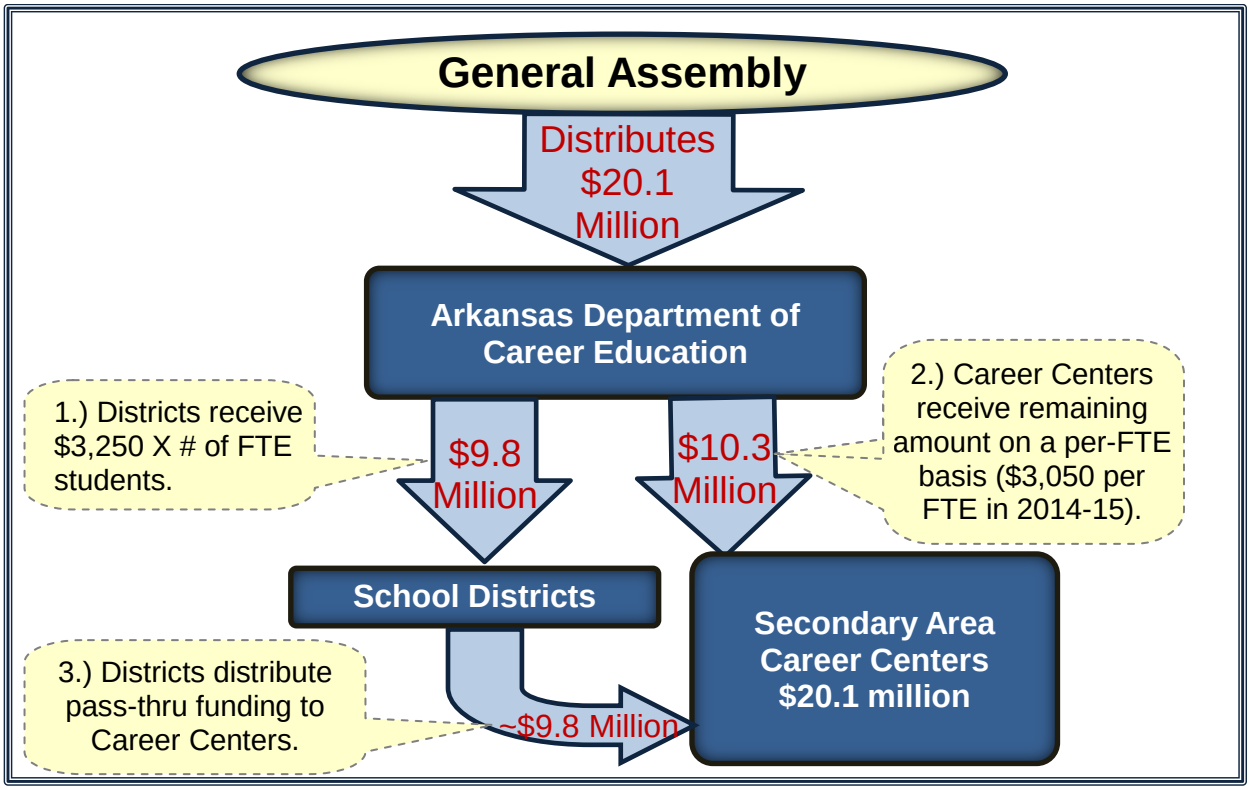
In addition to foundation funding, the General Assembly provides about $20.1 million to ACE for K-12 career and technical education provided by 25 Career Centers. ACE distributes the $20.1 million in two parts. The department provides school districts with $3,250 per full-time equivalent student (FTE) based on each district's prior-year enrollment in career education courses provided by the tech centers. This per-student amount is specified in statute (in the same section of code that specifies other adequacy-related funding, including foundation and categorical funding) and has remained unchanged since it was first established through Act 59 of 2003 (§ 6-20-2305(b)(2)(B)). Funding is also provided for students considered to be less than 1 FTE at the rate of $1,625 for 1/2 FTE, $1,083 for 1/3 FTE, and $541 for 1/6th FTE. For the 2014-15 school year, funding was provided to 174 districts for about 3,032 FTE students (based on prior year FTEs), and the total amount paid to the districts was $9,855,099. This funding is considered pass-through funding because each year the Career Centers bill participating high schools for student training fees based on the school's FTE count.

Districts receive vocational center aid based on the previous year's FTE students, but they pay the Career Centers based on current year numbers. That means that if a district had 50 students enrolled last year and 60 students this year, the district would receive funding for 50 students, but would have to pay the Career Centers for 60 students. Additionally, in recognition of the high cost of providing career and technical education, some districts have agreed to pay more than the required $3,250 per FTE, using other district funds to cover the additional cost.

After all of these reimbursements are paid to districts, ACE sends the funds remaining from the original $20.1 million directly to the Career Centers for program operation and administration expenses. This funding is distributed to each Career Center based on the FTE student count of each center. In 2014-15, this portion of the funding totaled $10,281,284, or $3,050 per student (based on an adjusted count of prior year FTEs).[28] (ASU Mountain Home, two satellites and part of a third Career Center did not receive vocational center aid in 2015-16, but will begin receiving this funding beginning in 2016-17.[29] In 2015-16, these centers and satellites collectively received nearly $138,000 in ACE operational funds.) Ultimately, with this funding and the funding that passes through the school districts, Career Centers receive the entire $20.1 million.

[28] Arkansas Department of Career Education, Special Policies and Procedures for Secondary Technical Centers, Section II.

[29] Childers, C., Arkansas Department of Career Education, July 15, 2016 phone conversation.



This vocational center aid funding has remained flat at about $20.1 million for a number of years. However, the number of FTE students attending Career Centers has increased. This results in Career Centers receiving less funding each year per student. For example, in 2012-13, after ACE distributed $3,250 per FTE to the districts, the remaining amount provided about $3,600 per student for less than 3,000 FTE students served by the Career Centers. By 2015-16, the number of FTE students attending Career Center classes jumped to more than 3,400 FTEs, leaving just $2,700 per student for the Career Centers.[30]

In 2014-15, Career Centers received about $6,300 per FTE (because the FTEs are adjusted for the vocational center aid, this amount is not exact). Collectively the Career Centers spent $22.85 million, or $6,816 per 2014-15 FTE.[31] The expenditures include Career Centers' spending of other types of funding they receive, as well as fund balances retained from previous years. Collectively the Career Centers had a fund balance of $3.84 million at the end of 2014-15.[32] The following table shows each Career Center's per-student expenditures. These expenditures come from self-reported expenditure reports the Career Centers submit to ACE annually.

	2014-15 FTEs	Expenditure per FTE
Arkansas Northeastern College Technical Center (College based)	98	$6,784
Mid-South Community College Technical Center (College based)	219	$5,794
ASU Searcy Regional Career Center (College based)	124	$7,555
Arkansas Tech University Career Center (College based)	190	$6,317
Conway Area Career Center (High school based)	298	$6,140

[30] McGill, P., Arkansas Department of Career Education, June 30, 2016 emails.
[31] These figures do not include expenditures or FTEs from ASU-Mountain Home Career Center because that center was funded with other resources in 2014-15.
[32] Isaacs, S., Arkansas Department of Career Education, June 27, 2016 email.

	2014-15 FTEs	Expenditure per FTE
De Queen/Mena Cooperative Technical Education Center (College based)	94	$5,998
EastArk Secondary Career Center (College based)	24	$9,260
Jefferson Area Vocational Center (High school based)	103	$6,263
Metropolitan Career and Technical Center (High school based)	239	$5,939
Monticello Occupational Education Center (High school based)	120	$6,326
National Park Technology Center (College based)	194	$5,457
North Central Career Center (High school based)	26	$7,925
NorthArk Technical Center (College based)	77	$6,931
Northeast Arkansas Career & Technical Center (High school based)	255	$5,704
Northwest Technical Institute Secondary Career Center (College based)	126	$7,772
Ouachita Area Career Center (College based)	107	$7,458
Phillips Community College Career and Technical Center (College based)	136	$9,339
River Valley Technical Center (High school based)	73	$7,040
Saline County Career Center (College based)	111	$7,440
SAU Tech Career Academy (College based)	137	$6,337
SouthArk Career Center (College based)	59	$10,130
Southeast Arkansas Community Based Education Center (High school based)	169	$7,683
Texarkana Area Vocational Center (High school based)	117	$9,803
Western Arkansas Technical Center (College based)	260	$6,985

VOCATIONAL START-UP GRANTS

The General Assembly also appropriates $2.37 million to help new career education programs purchase a minimum level of equipment. This funding is typically provided to school districts, but Secondary Career Centers and other organizations may also be eligible. In 2014-15, ACE spent a total of $2,369,429 in vocational start-up grants. In 2014-15, 47 school districts, two two-year colleges and one education service cooperative received grant funding. The average award was about $47,400, although awards ranged from about $6,800 to nearly $150,000.[33]

FEDERAL PERKINS FUNDING

The federal government provides funding to schools to support secondary and postsecondary career and technical education. This money, allocated based on the Carl D. Perkins Career and Technical Education Act of 2006, is known as Perkins funding. About 15% of the Perkins funding received by the state is reserved for state administrative use, and the remaining funding is divided between secondary and postsecondary use. In Arkansas, secondary education receives 75% of the remaining funds, and postsecondary education receives the other 25%. This adequacy study report focuses on the secondary education portion.[34]

In 2014-15, districts were allocated a total of about $6.6 million in Perkins funding to support CTE. That equates to about $48 per high school student (9th through 12th grade students, not including charter school students. Charter schools do not receive any Perkins funding). The majority of the funding (70%) is allocated to districts based on the number of 5-17 year olds whose household income is below the poverty line. The remaining amount is distributed based on each district's general student enrollment. Districts whose Perkins allocations are less than $15,000 must join a consortium—usually the district's education service cooperative—where the funding is pooled with other districts' Perkins funding. A consortium board, consisting of representatives of each district pooling funding, determines how the money will be spent each

[33] AASIS, Vocational Center Start-Up Grants and Aid Appropriation Expenditures FY2014-15.
[34] Perkins Reference Manual for Local Coordinators and State Staff, Arkansas Department of Career Education.

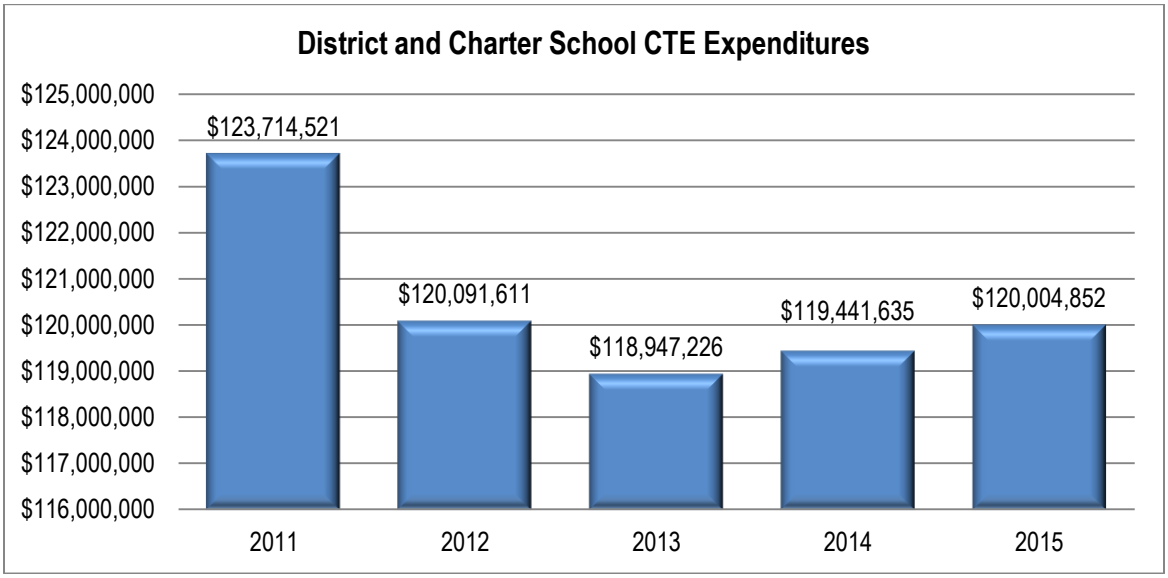
year. In 2014-15, just 47 of the 236 districts were allocated more than $15,000 in Perkins funding and therefore received their funding directly. [35]

In 2014-15, the average district award amount was about $27,800, but the funding ranged from as little as $2,200 for one district (Poyen School District) to as much as $389,493 for another district (Little Rock School District).[36]

Perkins funding is actually *distributed* to districts and consortia on a reimbursement basis. The money can be spent on a variety of CTE resources, including career coaches, equipment, professional development for CTE educators and other CTE salaries and benefits.

CTE EXPENDITURES

Districts and charter schools typically spend about $120 million annually on career and technical education.[37] Expenditures in 2014-15 equated to about $255 per student statewide. The figures in the chart below show the expenditures of school districts and open-enrollment charter schools. Charter school CTE expenditures are minimal. For example, only one of the 11 open enrollment charter schools that served high school students in 2014-15 recorded any CTE expenditures, though charter schools appear to have taught CTE courses. An ADE official noted that the lack of CTE expenditures for charter schools may be the result of the way some charter schools deliver CTE courses (i.e., virtual classes through a digital learning vendor). The charter CTE expenditures may actually be recorded using technology expenditure codes, rather than CTE codes.[38] The expenditures in the chart below do not include expenditures made by Secondary Career Centers providing CTE courses for district students or by Perkins consortia for purchases made on districts' behalf.



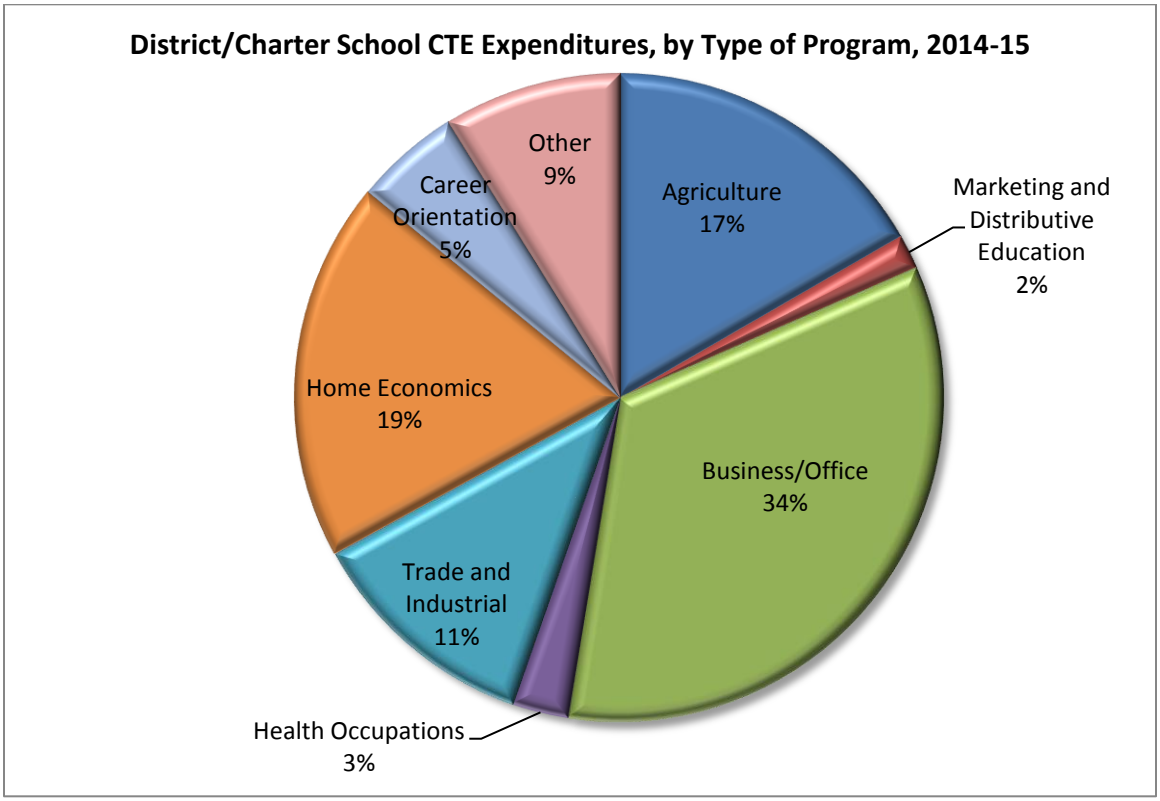
Note: The expenditures above do not include district expenditure of vocational center aid (funding for Secondary Area Career Centers) that was not coded as a Career Education Program (function codes 1300-1399). In 2014-15, such expenditures would have added another nearly $6 million.

[35] Swicegood, M., Arkansas Department of Career Education, May 16, 2016 email.
[36] Swicegood, M., Arkansas Department of Career Education, May 16, 2016 email.
[37] Arkansas Public School Computer Network, 2014-15 expenditures in function codes 1300-1399.
[38] Boyd, A., Arkansas Department of Education, July 1, 2016 email.

Districts used foundation funding and other local funds to pay for the vast majority of those expenditures, as shown in the table below.

District/Charter School Funding Used to Pay For CTE Expenditures	2014-15 Total	Per K-12 Student
Foundation Funding and Other Local Funds	$101,473,464	$215.34
Vocational Center Aid	$8,675,634	$18.41
Perkins Funding	$2,931,788	$6.22
Vocational Start-Up Grants	$1,556,905	$3.30
Other (e.g., state National School Lunch categorical funding, state Majority to Minority revenue, etc.)	$5,367,061	$11.39
Total	**$120,004,852**	**$255**

The following chart shows how the district and charter career education expenditures were broken out by occupational category. This chart uses expenditure data pulled from the APSCN system, which does not perfectly align with the program categorization used by ACE. That said, the largest CTE expenditures were made in the area of Business/Office, Home Economics and Agriculture. That appears to mirror the most popular CTE courses: Computerized Business Applications, Family & Consumer Sciences, Food & Nutrition and Survey of Agriculture Systems.



Note: The categories in the pie chart above are those used by the Arkansas Financial Accounting Handbook for APSCN. Some of the categories, such as Home Economics, use terminology that is no longer favored by career and tech educators.

STUDENT ACHIEVEMENT

As a component of its requirements under the federal Perkins Act, ACE must report on students' performance in career and technical education. Each year, ACE must submit data to the federal government on students concentrating in CTE courses. The data include the students' academic performance in English and math, their performance in CTE courses, their graduation rates and their post-high school employment or college placement.

The following table describes the performance of the state's districts on various CTE measures required by the federal government.[39] **CTE concentrators** are students who have completed at least three units of credit in a program of study. CTE concentrators are identified by ACE using APSCN enrollment records. ACE uses data on concentrators in the agency's federal reporting. **CTE completers** are students who have completed at least three units of credit in a program of study *and* graduated from high school. The CTE completers are identified locally by the high school, which then self-reports the number of completers to ACE.

	Arkansas 2014-15
% of CTE concentrators proficient on Grade 11 Literacy	71.95%
% of CTE concentrators proficient on Geometry End of Course exam	75.88%
Technical Skill Attainment: % of CTE concentrators proficient on CTE competency exams	74.35%
Graduation rate for CTE concentrators	96.64%
Placement: % of completers who were either employed, in the military or enrolled in postsecondary education six months after graduation	91.81%
Nontraditional participation: % of students enrolled in at least one unit in a program of study that is non-traditional for their gender	26.72%
Nontraditional completion: CTE concentrators who complete the requirements for a program of study that is not traditional for their gender	19.63%

Data Source: Arkansas Department of Career Education

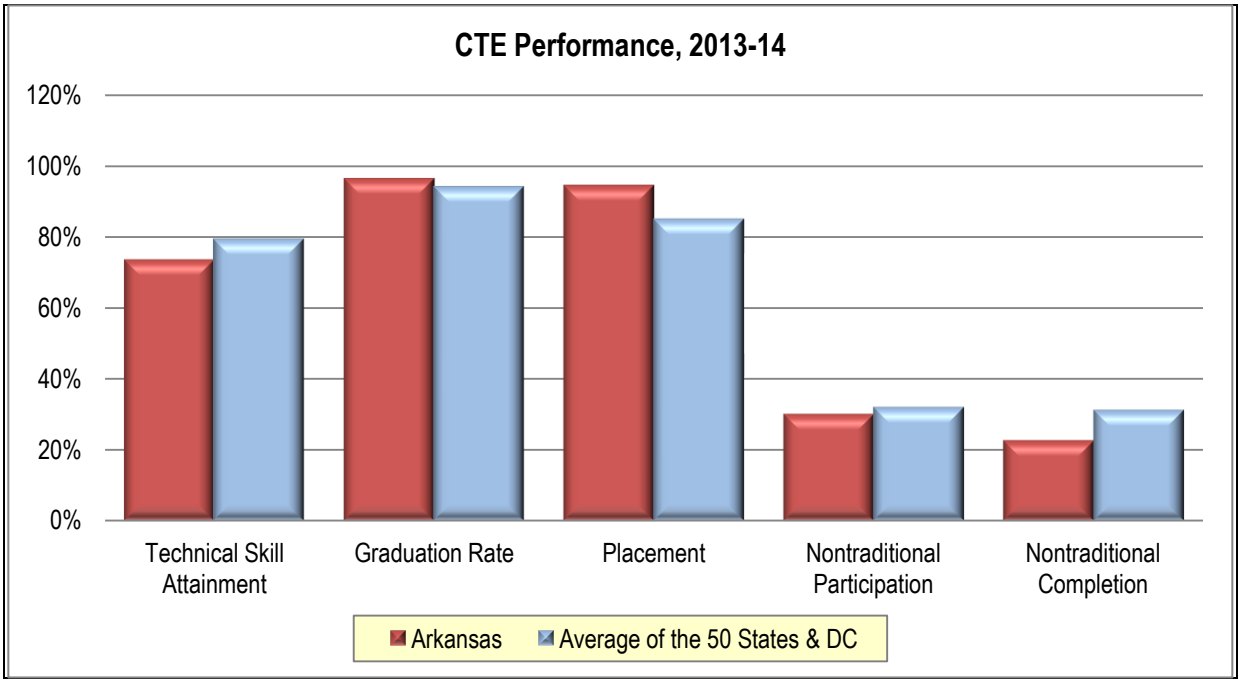
The U.S. Department of Education, in an annual report on state CTE performance, noted that CTE concentrators in all states have higher graduation rates than all students generally. The recent Thomas B. Fordham Institute report that examined CTE students in Arkansas found that in this state, "Concentrators are 21 percentage points more likely to graduate from high school than otherwise identical students (with similar demographics, eighth grade test scores, and number of CTE courses taken) who do not concentrate." The report also found that concentrators are more likely to be employed, more likely to be enrolled in a two-year college and more likely to have higher wages than students who do not concentrate.[40]

While the table above represents the most recent available data, 2014-15 data from other states are not yet available nationally. However the following graph shows the most recent, publicly available data.[41] Because each state is allowed to define the specific calculations they will use for each variable, the states' measures cannot be perfectly compared. The following chart was created to provide a rough idea of how Arkansas compares with other states.

[39] Swicegood, M., Arkansas Department of Career Education, April 13, 2016 email.

[40] Dougherty, S.M., Career and Technical Education in High School: Does It Improve Student Outcomes?, Thomas B. Fordham Institute, April 2016.

[41] U.S. Department of Education, Perkins Web Portal, Perkins Data Explorer, https://perkins.ed.gov/pims/dataexplorer


CTE Performance, 2013-14
120%
100%
80%
60%
40%
20%
0%
Technical Skill Attainment
Graduation Rate
Placement
Nontraditional Participation
Nontraditional Completion
Arkansas
Average of the 50 States & DC

APPENDIX

The chart below shows the Career Clusters and the Programs of Study for 2015-16. There were 16 Career Clusters and 59 programs of study.

Career Cluster	Program of Study
Agriculture, Food & Natural Resources	Agribusiness Systems
	Agricultural Power, Structural & Technical Systems
	Animal Systems
	Natural Resources/Environmental Service Systems
	Plant Science - Biological
	Plant Systems - Horticulture
Architecture & Construction	Construction Technology
	Drafting & Design - Architectural CAD
	HVACR
Arts, A/V Technology & Communications	Advertising and Graphic Design
	Audio-Video Technology & Film
	Graphic Communication
	Photography
	Radio Broadcasting
	Television Production
Business, Management and Administration	Management
	Office Administration
Education & Training	Education & Training
Finance	Accounting
	Banking Services
	Business Finance
	Insurance & Risk Management
	Securities and Investments
Government & Public Administration	JROTC
Health Science	Health Informatics
	Health Science Technology Education
	Sports Medicine
	Medical Professions
Hospitality & Tourism	Culinary Arts
	Food Production, Management, & Services
	Hospitality
	Lodging Management
Human Services	Child Care Guidance, Management & Services
	Consumer Services
	Cosmetology
	Family & Consumer Sciences Education

Career Cluster	Program of Study
Information Technology	Computer Engineering
	Digital Communications
	Mobile Applications
	Programming
	Web Design
Law, Public Safety, Corrections & Security	Criminal Justice
Manufacturing	Advanced Manufacturing
	Electronics
	Furniture Manufacturing
	Industrial Equipment Maintenance
	Machine Tool Technology
	Welding
Marketing, Sales, Service	Entrepreneurship
	Marketing Technology & Research
STEM	Biomedical Sciences
	Drafting & Design - Engineering CAD
	Electronics
	Pre-Engineering
Transportation, Distribution & Logistics	Automotive Collision Repair
	Automotive Service Technology
	Aviation
	Diesel Mechanics
	Power Equipment Technology