K-12 Career and Technical Education

2022 ADEQUACY STUDY

May 2, 2022

Prepared for the Interim Senate Committee on Education

and the Interim House Committee on Education

Contents

Introduction

Arkansas Code §10-3-2102 does not explicitly require the House and Senate Education Committees to include a review and analysis of Career and Technical Education (CTE) in the biennial adequacy study.[1] However, this report has been prepared in response to requests by the Education Committees. In addition, it is important to note that the current definition of educational adequacy that was defined and is used by the Education Committees includes references that are directly related to CTE. First, the definition states that the standards of accreditation and the mandatory thirty-eight (38) Carnegie Units that must be taught, are part of the basis for identifying what resources are required to achieve adequate funding for Arkansas's public schools. Career and Technical Education is also one of the required content areas that must be included in the 38 units. Additionally, the definition states that "opportunities for students to develop career readiness skills" is part of the basis for identifying the resources required to achieve adequate educational funding.

This report is provided in response to Committee members' requests and CTE's relevancy to the adequacy definition. The report examines career and technical education in the state's public K-12 schools, including the CTE requirements for students and districts, the governance, funding, and delivery of CTE, as well as the programs of study and courses available for Arkansas's students.

Arkansas Policy Background

Arkansas Code §6-5-1002(b) requires 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" and permits the awarding of "postsecondary credits for career and technical education program of study courses that lead to a postsecondary credential[s], certificate[s], or degree[s]."

According to A.C.A § 6-5-1002(a), a CTE program of study means a planned program of courses and learning experiences that:

(1) Begins with the exploration of career options;
(2) Supports basic academic and life skills; and
(3) Enables achievement of:

(A) High academic standards;
(B) Leadership;
(C) High-skill, high-wage employment preparation; and
(D) Advanced continuing education.

Workforce Projections

K-12 education is intended to prepare students for future employment and the next level of education necessary for their chosen career. Secondary career and technical education, in particular, helps high school students explore career options and exposes them to a variety of occupations and industries. It is also meant to help students begin building the skills they need for

[1] However, Arkansas Code § 10-3-2102(c) does require the Division of Career and Technical Education, in addition to the Division of Elementary and Secondary Education and Division of Higher Education, to provide the Committees "assistance and information as requested...."

the work world, regardless of their post-secondary education plans. In addition to helping students, CTE also can serve the needs of communities and industries by developing the local workforce.

Because CTE is rooted in the mission of preparing today's youth for future careers, it is important to understand the current landscape of education attainment and employment in Arkansas. The following lists, developed by the Arkansas Division of Workforce Services, provide the top 10 occupations in Arkansas based on "the projected number of annual job openings." The occupations are provided by the level of education typically needed.

Top 10 Occupations by Education Level Typically Required
Based on State of Arkansas' 2020-2022 Short-term Occupational Projections Net Growth

	High School or Less	Associate Degree or Vocational Training	Bachelor's Degree or Higher
1	Insurance Sales Agents	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	Clergy
2	Electricians	Medical Assistants	Medical and Health Services Mgr.
3	Janitors and Cleaners, Except Maids and Housekeeping Cleaners	Firefighters	Nurse Practitioners
4	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	Dental Assistants	Financial Managers
5	Landscaping and Grounds keeping Workers	Paralegals and Legal Assistants	General and Operations Managers
6	Industrial Machinery Mechanics	Licensed Practical and Licensed Vocational Nurses	Software Developers and Software Quality Assurance
7	Police and Sheriff's Patrol Officers	Computer User Support Specialists	Analysts and Testers
8	Plumbers, Pipefitters, and Steamfitters	Respiratory Therapists	Project Management Specialists and Business Operations
9	Customer Service Representatives	Emergency Medical Technicians and Paramedics	Specialists, All Other
10	Stockers and Order Fillers	Dental Hygienists	Registered Nurses

Source: Arkansas Division of Workforce Services - Department of Commerce, *Top 10 Occupations by Education Level*, https://www.discover.arkansas.gov/Career-Watch/Top-10-Occupations-By-Education.

CTE Oversight

General control and supervision of all programs of vocational, technical, and occupational education in secondary institutions is the authority and responsibility of the State Board of Education[2] and the Division of Career and Technical Education (DCTE).[3] See Appendix A for history.

The DCTE within the Arkansas Department of Education (ADE)[4] approves and oversees public school CTE programs across the state. DCTE is responsible for adopting rules governing CTE programs, prescribing academic standards for CTE programs and teachers, and approving the Programs of Study and courses districts can offer based on federal requirements.[5] In addition, the DCTE is responsible for receiving and distributing federal and state funds intended to support CTE in secondary schools[6] and for ensuring CTE instructors are appropriately licensed and permitted.[7]

K-12 Public School Requirements

According to the DCTE, to meet the Arkansas Standards of Accreditation regarding CTE, school districts are required to provide all students in grades 5 – 8 with instruction in career and technical education through the courses of Keyboarding or KeyCode and Career Development. Additionally, each student is required to have a **Student Success Plan**[8] on file upon completing the eighth grade. The Student Success Plan includes, among other requirements, college and career components.

The Standards further require that school districts offer a total of 38 units of instruction in grades 9-12, and nine of those units are to be "sequenced career and technical education courses representing three (3) occupational areas."[9] To comply with state standards, schools must offer one program of study from three of the following occupational areas:

- Agricultural Science and Technology
- Business and Marketing Technology
- Family and Consumer Sciences
- Science, Technology, Engineering and Mathematics (STEM)
- Trade and Industry

[2] Ark. Code Ann. §6-11-203.
[3] Ark. Code Ann. §25-30-107.
[4] Act 910 of 2019 moved DCTE under the Arkansas Department of Education
[5] *See* Ark. Code Ann. § 6-16-140.
[6] Ark. Code Ann. § 6-11-205.
[7] *See* Ark. Code Ann. §§ 6-15-102(f)(5) and 6-15-1004(d)(3).
[8] Ark. Code Ann. § 6-15-2911(b).
[9] ADE Division of Career and Technical Education Program Operational Guide, September 2021

CTE Funding

The matrix does not provide a dollar amount specifically for CTE; however, districts can and do use state foundation funding to provide CTE instruction. Funding sources for CTE programs include Carl D. Perkins federal funding and vocational start-up grant funding.

Carl D. Perkins Federal Funds

Perkins V federal funds received through DCTE are used to improve CTE programs and services for students enrolled in CTE programs of study, which may also include other uses as outlined in Perkins V[10], including support and Career Preparation courses. Only CTE programs of study or CTE modified programs approved by DCTE are eligible for Perkins funding and graduation credits. If program approvals are unavailable due to unforeseen circumstances, Perkins funding and student graduation credits will not be negatively impacted.[11]

Fund Source	2021 Funding
Carl D. Perkins Federal	$12,404,169

Of the total funds that come to the state from the Perkins Act, 85% is distributed to local recipients, and the remaining 15% is used at the state level for administration (5%) and leadership (10%).[12] The 85% distributed to location recipients is further split between secondary (75%) and post-secondary (25%). According to the Act, the secondary funds are to be distributed by the following formula[13]:

- 70% based on number of persons ages 5-17 that reside in each district from families with incomes below the poverty line.
- 30% based on number of persons ages 5-17 that reside in each district or on the actual K-12 enrollment in districts as reported to the National Center for Educational Statistics (NCES).

Analysis of 2021 expenditure data showed almost $3.8M was disbursed to public school districts. There was a remaining budge of close to $4.8M in aid from Perkins V funding.[14]

State Start-Up Grants

Annually, State Start-Up grants are provided on a competitive basis to assist with the start-up expenses of a new program of study.[15]

Fund Source	2021 Funding
Vocational Start-Up Grants	$2,445,000

Occupational area grant awards are available exclusively for the purpose of purchasing new equipment and program specific supplies, required training, assessment, and software to support newly approved career focus programs of study. The factors used for determining both approval and the amount of the grant awards are contingent on:

- funds available;
- state priority;
- labor market data; and
- evaluation and review of application and rubric.[16]

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[10] Strengthening Career and Technical Education for the 21st Century Act, Pub. Law No. 115-224 (2018).
[11] DCTE Perkins Manual, July 2021
[12] Carl D. Perkins Career and Technical Education Act of 2006, 20 U.S.C. § 2322, Sec. 112(a).
[13] *Id.* at Sec. 131(a).
[14] ASIS Expenditure Data provided by BLR Fiscal Division, April 2022.
[15] DCTE Policies and Procedures for Career and Technical Education, September 2021.
[16] DCTE Policies and Procedures for Career and Technical Education, September 2021.

Almost $2.4M was awarded in 2021 to 59 schools for the start-up of 34 programs of study. The following table shows the programs of study that were received $100,000 or more in funding. A full list of 2021 Start-Up Grant awards by district and school can be found in Appendix B.

Program of Study
Human & Social Services
Criminal Justice
STEAM
Unmanned Aerial Systems
Marketing Business Enterprise
CASE Animal Science
AV/Tech & Film
Construction

Analysis of FY2021 expenditure data showed a balance of close to $59,000 in Start-Up Aid.[17]

Secondary Technical Centers

Funding to support secondary technical centers is to be determined by DCTE, in consultation with the Office of Skills Development, and approved by the State Board of Education.[18] Called "secondary vocational centers" or "multidistrict vocational centers" in statute[19] (and a variety of names in rules), these centers are typically sponsored by high schools or two-year colleges. In 2021, there were 30 Career Centers with 23 satellite locations are in place to serve high school students within a defined geographical region. See Appendix C for a list of Secondary Area Career Centers, followed by the number of programs offered.

The State Board of Education reviews recommendations from the Career Education and Workforce Development Board to establish new vocational centers to serve high school students from several school districts in locations where services are needed to:

Fund Source	2021 Funding
Vocational Center Aid	$19,240,092

- Support economic, industrial, and employment development efforts;
- Provide equity and substantially equal access to quality vocational programs; and Improve school programs to assist schools in meeting accreditation standards[20]

The Office of Skills Development is required to provide an annual report to the State Board of Education on the financial viability of vocational centers, enrollment, programs, and the success of students.[21]

[17] ASIS Expenditure Data provided by BLR Fiscal Division, April 2022.
[18] A.C.A §6-20-2305
[19] *See, e.g.* Ark. Code Ann. § 6-51-302 (concerning the subchapter on multidistrict vocational centers and its references to the approval of the establishment of secondary vocational centers that are operated by a postsecondary vocational-technical school or two-year college).
[20] Ark. Code Ann. § 6-51-302(a).
[21] Ark. Code Ann. § 6-51-302(f).

CTE Programs of Study

Applications to implement new CTE programs of study are reviewed by content area personnel within ADE with input from industry leadership, as well as secondary and postsecondary partners. Program applications are reviewed and evaluated using the following factors:

- inclusion of state academic standards (including literacy, math, and science);
- local industry needs and support for the program (evidence must be provided that a pathway is connected to an industry need);
- district capacity to house and maintain the program;
- district support for the program; and
- postsecondary programs available in the area for concurrent credit and/or further education.[22]

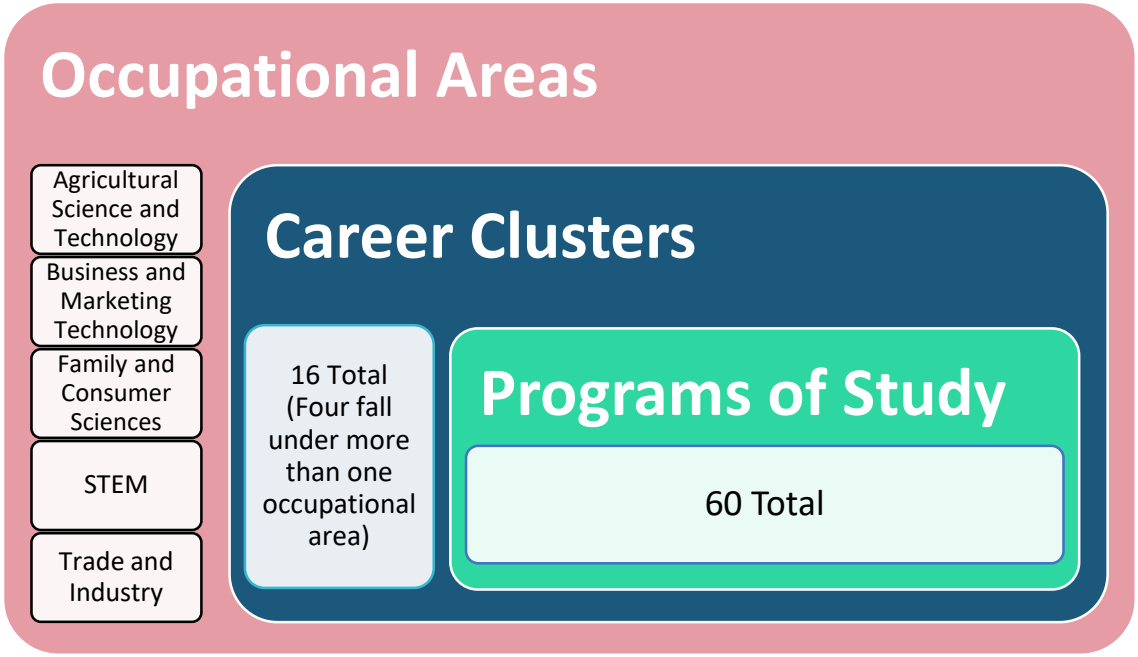
Programs of study must offer a State-approved credentialing opportunity. Additionally, Career and Technical Student Organizations (CTSOs) are a requirement of the federal Perkins program.

Programs of study are reviewed annually to ensure they:

- Meet the federal Perkins V definition of a Program of Study;
- Follow all policies and procedures;
- Remove all critical elements identified in tiered support review(s); and
- Follow all required CTE guidelines.

Arkansas CTE programs of study are offered in 16 career clusters that fall under five occupational areas as seen in the diagram below. According to DCTE policies and procedures, a career cluster is a "grouping of occupations and broad industries into a national classification of 16 clusters that are based upon common knowledge and skills. Career clusters include hundreds of occupations that may be grouped into pathways around which educational programs of study can be built."[23]

[22] DCTE Policies and Procedures for Career and Technical Education, September 2021
[23] DCTE Policies and Procedures for Career and Technical Education, September 2021.



The diagram below identifies the career clusters that fall under the five occupational areas. The number of programs offered in each career cluster during the 2021 school year are shown in parenthesis.

Agricultural Science & Technology	Business & Marketing	Family & Consumer Sciences Education	STEM	Trade & Industry
•Agriculture, Food, & Natural Resources (6)	•Business Management & Administration (3) •Finance (3) •Hospitality & Tourism (1) •Marketing (2) •Transportation, Distribution, & Logistics (1)	•Education & Training (1) •Hospitality & Tourism (3) •Human Services (6)	•Architecture & Construction (2) •Health Sciences (1) •STEM (3) •Information Technology (11)	•Architecture & Construction (2) •Arts, A/V Tech, HVAC (5) •Government & Public Administration (1) •Health Sciences (3) •Law, Public Safety, & Corrections (1) •Manufacturing (4) •Transportation, Distribution, & Logistics (5)

The following table provides information on the 2021 programs offered by career cluster. A full list of programs by occupational area and career cluster can be found in Appendix D.

Career Cluster	Program of Study
Agriculture, Food & Natural Resources	Agribusiness Systems
	Agricultural Power, Structural & Technical Systems
	Animal Systems
	Natural Resources/Environmental Service Systems
	Food Products and Processing
	Plant Systems
Architecture & Construction	Construction Technology
	Heating, Ventilation, Air Conditioning and Refrigeration (HVACR)
Arts, Audio/Video Technology & Communications	Advertising and Graphic Design
	Audio-Video Technology & Film
	Graphic Communication
	Photography
	Radio Broadcasting
	Television Production
Business, Management and Administration	Management
	Office Administration
	Medical Office Administration
Education & Training	Education & Training
Finance	Accounting
	Banking
	Insurance & Risk Management
	Securities and Investments
Government & Public Administration	JROTC (Air Force, Army, Marines, Navy)
Health Science	Sports Medicine
	Medical Professions
Hospitality & Tourism	Culinary Arts
	Food Production, Management, & Services
	Hospitality and Tourism
Human Services	Child Care Guidance, Management & Services
	Consumer Services
	Cosmetology
	Family & Consumer Sciences Education
	Advanced Nutrition Dietetics

PROGRAM DELIVERY

Districts that do not offer required programs of study on campus may utilize other public schools, secondary technical centers, or postsecondary institutions to meet requirements upon approval by DCTE.[24]

PROGRAM PERSONNEL

CTE teachers' licensures are submitted through the DESE's Office of Educator Licensure. Additional endorsement and training requirements are outlined in the DCTE's policy manual.

CTE instructors teaching at a Secondary Technical Center (STC) must have a minimum of an associate's degree within the area of instruction, have completed all necessary background checks, and have met all college accrediting standards for instructors.[25]

CTE COURSES

While districts are required to offer CTE programs, which include nine units of sequenced courses, students are not required to take career and technical education courses. Graduation requirements call for six hours of "career focus" or additional content credits, but these credits can be fulfilled by courses that are not considered CTE.[26] In 2021, there were 152 "career focus" courses that were not coded as CTE.

For each CTE program of study that is offered, at least three levels of courses are taught, although not all of these are necessarily taught every semester. In addition to program specific courses there are other types of CTE courses, including college and career readiness courses. There were a total of 457 distinct CTE courses taught across the state in 2021, with 250 of the state's 258 public school districts and open-enrollment charter school systems offering one or more CTE courses. The number of CTE courses that were offered to high school students varied widely by district.

Concurrent Credit

Concurrent credit enrollment opportunities are available in the third course of the sequence in many programs of study. Act 456 of 2019 funded concurrent credit expenses for eligible students.[27] In 2021, a total of 189 districts and charter school systems offered one or more concurrent credit course. River Valley Virtual Academy in the Van Buren School District was the only school with a waiver from offering concurrent credit courses in the 2021 school year.

Weighted Credit

Weighted credit is available for certain courses, meaning that students earn the same number of credits as they do for Advanced Placement courses. Under Act 632 of 2019, which amended Arkansas Code § 6-15-902 concerning public schools' grading scales, DESE, in collaboration with DCTE, may approve a course for "weighted credit" if the course exceeds the curriculum standards for a non-weighted course and leads to an approved industry recognized credential. According to DCTE, CASE Agriculture – approved in January 2020 – was the first weighted credit course approved under Act 632.[28]

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[24] DCTE Policies and Procedures for Career and Technical Education, September 2021
[25] DCTE Policies and Procedures for Career and Technical Education, September 2021
[26] Arkansas Graduation Requirements
[27] Ark. Code Ann. § 6-85-401, et seq., creating the Arkansas Concurrent Challenge Scholarship Program.
[28] Meeting with DCTE Director, April 2022.

Work-Based Learning

Work-Based Learning (WBL) is a nationally recognized umbrella term that all WBL opportunities fall under. WBL includes industry-focused experiences that provide an opportunity for students to explore and engage in the learning and skills necessary to prepare them for the future workforce.

The Perkins V federal definition of Work-Based Learning is "sustained interactions with industry or community professionals in real workplace settings, to the extent practicable, or simulated environments at an educational institution that foster in-depth, first-hand engagement with the tasks required in a given career field, that are aligned to curriculum and instruction."[29]

The following WBL courses meet federal requirements:

- Career Practicum
- Internship (paid or unpaid)
- Pre-Apprenticeship

In 1991, the Arkansas General Assembly enacted companion measures, Acts 546 and 553 (codified in Ark. Code Ann. § 6-50-501 et seq.), which direct the DCTE to "develop and implement work-based learning programs to provide additional educational and training opportunities for Arkansas high school students." Acts 546 and 553 further provide that the programs should include high-quality supervised learning opportunities on work sites, integrate academic and vocational teaching and learning, use competency-based measures for evaluating student progress, and provide both academic and occupational credentials.

The following table shows the total number of CTE courses by course type taught in 2021 as well as the total enrollments and number of districts and open-enrollment public charter schools in which they were taught. Males made up 52% of CTE course enrollments. See Appendix E for a map showing CTE students by district.

CTE Students

Course Type	Courses	Enrollment	Districts/ Charters
CTE	6,372	157,567	251
CTE Concurrent	1,972	10,626	189
CTE Work-Based Learning	123	3,216	100
CTE Weighted	74	1,569	62

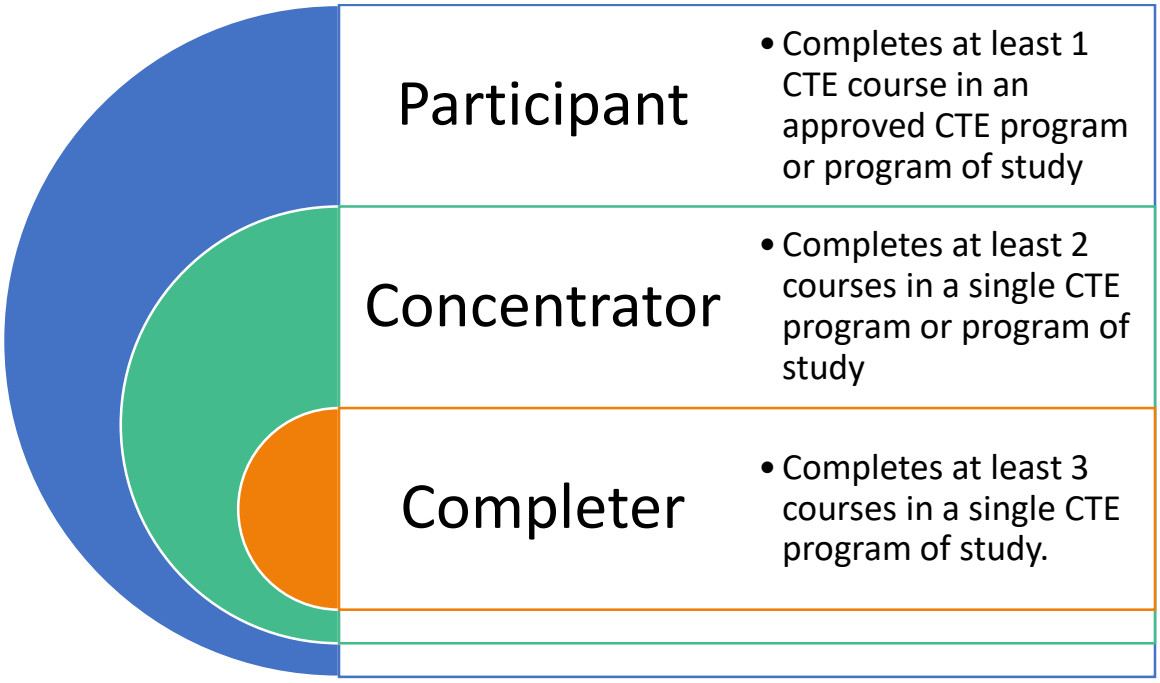
As mentioned earlier, students are not required to take career and technical education courses, but they are required to complete six units of "career focus" credits. Additionally, as discussed above, Arkansas statute requires the preparation of a student success plan for every student by the end of grade 8, beginning in the 2018-19 school year. The student success plans are to be completed by school personnel in collaboration with parents and students and are required to include "college and career planning components." In addition, districts are required to use college and career readiness assessment data to support strategies or programs to "increase the attainment of career credentials or technical certificates through expanded opportunities for students."[30]

[29] DCTE Policies and Procedures for Career and Technical Education, September 2021
[30] Ark. Code Ann. § 6-5-2911

The following student goals are identified in the State's Perkins Plan:

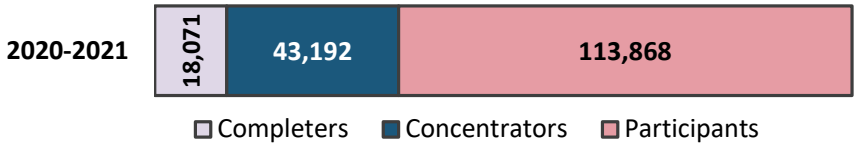
1. Each CTE student will complete their CTE program with the most competitive academic, technical, and employability skills for future success.
2. Each CTE student will establish an individual career plan and successfully accomplish the goals in that plan.
3. Each CTE student will develop and apply personal competencies and soft skills that promote learning and success in college, career, and life.
4. One year after graduation, each CTE student will be actively engaged in college, further career preparation, military service, and/or competitive employment.[31]

The following diagram provides definitions for the different terms used for CTE students.



[31]Arkansas Perkins V Plan, 2020

The following chart shows the total number of CTE participants, concentrators, and completers in 2021.[32] See Appendix E for a map showing CTE students by district.

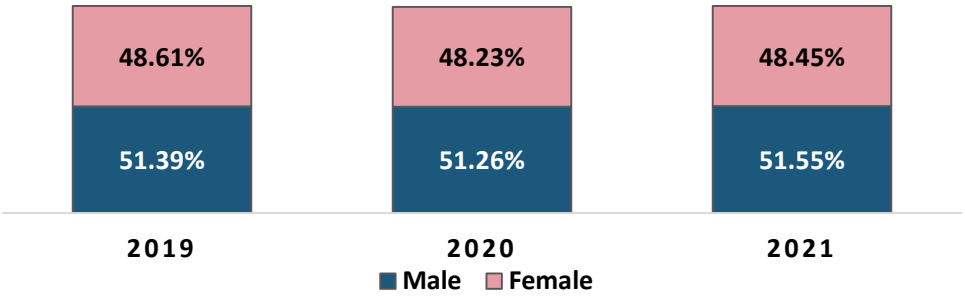


The following table provides participant data by career cluster.[33]

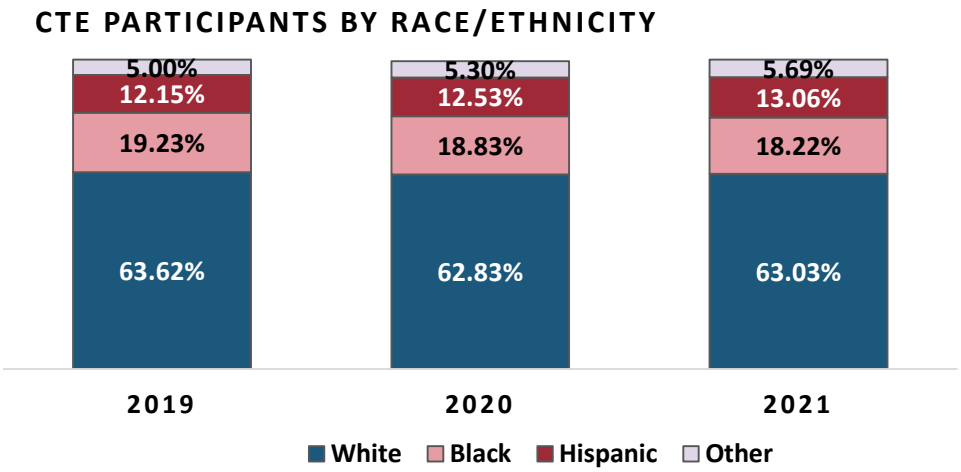
CLUSTER	2020-21
Agriculture, Food, and Natural Resources	23,466
Architecture and Construction	1,209
Arts, Audio/Video Technology and Communications	1,390
Business Management and Administration	22,104
Education and Training	1,075
Finance	7,184
Government and Public Administration	1,563
Health Sciences	4,221
Hospitality and Tourism	14,178
Human Services	12,108
Information Technology	12,142
Law, Public Safety, Corrections and Security	747
Manufacturing	700
Marketing	5,701
STEM (Science, Technology, Engineering, & Mathematics)	2,090
Transportation, Distribution and Logistics	8,394

DEMOGRAPHICS

CTE PARTICIPANTS BY GENDER



[32]University of Arkansas, Office of Innovation, April 2022.
[33] University of Arkansas, Office of Innovation, April 2022.



The table below shows the percentage of CTE participants classified as special English learners, special education, or economically disadvantaged.

	2019	2020	2021
English Learner	6.8%	6.4%	6.2%
Students with Disabilities	10.6%	11.0%	11.4%
Economically Disadvantaged	56.5%	57.9%	59.0%

Performance Indicators

As a component of its requirements under the federal Perkins Act, DCTE must report to the federal government measures of student performance in career and technical education. The following table provides data on several of the Perkins V performance measures identified in the State's Perkins Plan[34]. The methodology for these performance measures can be found in Appendix F.

Perkins V Performance Measures	Target	2021 Performance
Graduation Rate (4-YR Adjusted Cohort)	87.1%	96.2%
Academic Performance	ELA: 48.4 MATH: 42.2 SCIENCE: 48.4	ELA: 65.7 MATH: 59.9 SCIENCE: 67.8
Post-Secondary Placement	75.8%	81.9%
Non-Traditional Enrollment	13.3%	32.0%
Post-Secondary Credentials	32.3%	14.5%

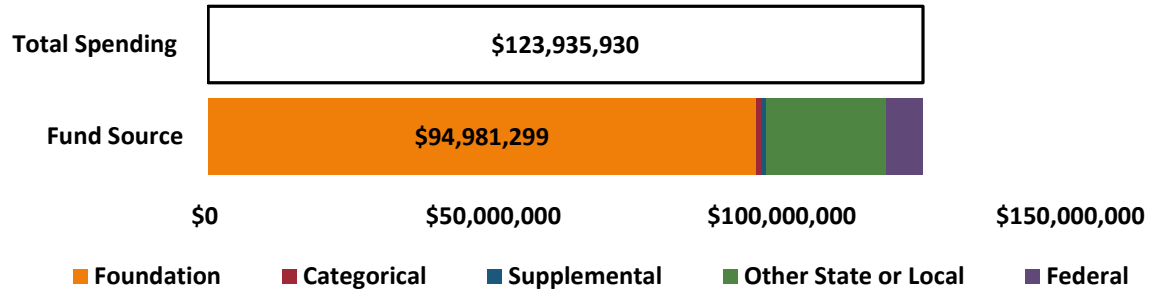
[34] CTE Summary Document 2019 to 202, Division of Career and Technical Education

CTE Expenditures

Calculating total school district expenditures for K-12 CTE is difficult to obtain because CTE instruction is provided in a variety of ways by different types of entities. For example, many districts pay other school districts or Secondary Technical Centers to provide CTE instruction for their students. Despite these issues, this report attempts to document the total CTE expenditures of districts and charter schools as recorded in the Arkansas Public School Computer Network (APSCN).

Arkansas public schools spent almost $124 million on CTE. Approximately 77% of CTE expenditures were from foundation funding.

Career and Technical Education: Spending by Fund Source



As shown in the following table, the vast majority of CTE expenditures during 2021 were made for Teachers Grades 1-12.

Expenditure Category	Total Expenditures
Teachers Grades 1-12	$104,184,477
Non-Athletic Instructional Materials	$6,650,341
Technology	$5,237,066
Instructional Supplies and Objects	$4,418,379
Other Classified Instructional Support	$1,700,423
Instructional Aides	$1,011,119
Substitute Teachers	$604,705
Miscellaneous Reconciling Items	$129,419

The following table provides 2021 instructional expenditures by occupational area. The largest instructional expenditures were for Business and Office Occupations.[35]

Function	Definition	Total Expenditures
Business/Office Occupations (includes Information Technology Fundamentals, MADD and EAST Initiatives)	Learning experiences that allow students to gain an overall understanding of business principles and practices and prepare them for employment in office occupations.	$41,225,881
Agriculture	Learning experiences that provide opportunities for students to prepare for or improve their competency in agricultural occupations.	$23,755,825
Home Economics/Culinary Arts	Learning experiences that prepare students with requisite knowledge, understanding, and skills for entry into home economic/culinary arts occupations.	$22,512,739
Trade and Industrial (including Industrial Arts)	Learning experiences that allow students to acquire an overall understanding of industry and technology or prepare students for entry into skilled or semi-skilled occupations in trade and industry.	$12,969,168
Career Orientation	Learning experiences which provide students with sufficient knowledge and understanding of the workplace and occupational tracks to enable them to make intelligent career decisions.	$7,508,693
Health Careers/Occupations	Learning experiences that prepare students with the knowledge, skills, and abilities required in health professions.	$4,639,498
Special Needs	Includes Tech Prep, Workplace Readiness, Regional Technical Coordination, and Other Career Projects.	$4,834,233
General Cooperative	Learning and working experiences which provide students with knowledge and skills in occupational programs and the opportunity to acquire on-the-job training experience.	$2,091,162
Marketing and Distributive Education	Learning experiences that prepare students to enter or improve their competency level in distributive occupations.	$1,734,032
Keystone	Designed to help 9th graders successfully navigate high school through instruction on study skills, time management, and goal setting strategies. Includes career exploration.	$623,739

[35] 2020-21 Expenditure Data from APSCN.

2020 APA Recommendations

When Augenblick, Palaich and Associates (APA), hired by the Senate and House Education Committees in 2020, presented its Arkansas School Finance Study, one of the consultant's recommendations was for the state to adopt a career readiness definition that includes: 1) core academic knowledge and skills, 2) capabilities, 3) behavior skills and dispositions, and 4) postsecondary preparation and planning. The APA study team further recommended that the definition be focused on career readiness for all students, as college is just one of several pathways to a career.[36]

2021 Legislation

The General Assembly did not pass any legislation regarding CTE.

[36] Augenblick, Palaich and Associates, WestED and Partners, "Arkansas School Finance Study," prepared for the Arkansas Senate and House Education Committee, December 2020.

Appendix A – History

Prior to the passage of Act 910 of 2019, the Transformation and Efficiencies Act, the Department of Career Education (DCE) and the Career Education and Workforce Development Board was charged with "general control and supervision of all programs of vocational, technical, and occupational education in secondary institutions." (Ark. Code Ann. § 25-30-107). Since the passage of Act 910, effective July 1, 2019, the Department of Career Education was transferred to the Department of Education and is now the Division of Career and Technical Education ("DCTE") and is under the direction of the State Board of Education.[37]

Act 910 also transferred the Office of Skills Development (OSD) from the Department of Career Education (now DCTE) to the Department of Commerce. The OSD, operating under the direction of the Career Education and Workforce Development Board, has responsibilities for providing funding to Secondary Technical Centers which provide secondary level CTE instruction.

[37] Section 1095 of Act 910 assigns the State Board of Education with the duty to provide "general supervision of career and technical education."

Appendix B – Start-Up Grant Awards (2021)

2020-2021 State Start-Up Awards			
School District	**School**	**Program of Study**	**Grant Award**
Alma	Alma High School	Animal Systems/CASE	$46,370.28
Ashdown	Ashdown High School	Unmanned Aerial Systems	$40,691.41
Bald Knob	Bald Knob High School	Medical Professions	$37,495.41
Bauxite	Bauxite High School	Human & Social Services	$88,034.50
Bauxite	Bauxite High School	Childcare Guidance w/o Onsite	$4,882.39
Bentonville	Grimsley Junior High School	Career Development	$23,162.50
Bentonville	Grimsley Junior High School	Family CSI	$48,307.63
Bentonville	Grimsley Junior High School	Pre-Engineering PLTW	$28,440.24
Berryville	Berryville High School	Bus Mktg Ent	$42,542.50
Berryville	Berryville High School	Childcare Guidance w/o Onsite	$31,504.40
Cabot	Cabot High School	Childcare Guidance w/o Onsite	$31,504.40
Cabot	Cabot Junior High School	Engineering & Technology	$39,456.35
Cave City	Cave City Middle School	Career Development	$23,162.50
Clarksville	Clarksville High School	CASE Natural Resources	$27,967.86
Cross County	Cross County High School	CASE Plant Science	$24,417.98
Deer/Mt. Judea	Deer High School	Animal Systems	$20,842.00
Deer/Mt. Judea	Mt. Judea High School	Animal Systems	$19,184.50
Dover	Dover High School	CASE Animal Science	$26,673.23
Drew Central	Drew Central High School	CASE Animal Science	$26,673.23
El Dorado	El Dorado High School	Sports Medicine	$50,793.66
Eureka Springs	Eureka Springs High School	CASE Plant Science	$32,146.27
Fordyce	Fordyce High School	Office Administration	$24,225.00
Greenwood	Greenwood High School	Internship/Youth Apprenticeship	$23,162.50
Greenwood	Greenwood High School	Unmanned Aerial Systems	$40,691.41
Horatio	Horatio High School	Digital Marketing	$26,010.00
Hoxie	Hoxie High School	C.N.A.	$3,100.76
Jackson Co.	Tuckerman High School	Human & Social Services	$97,070.85
Jasper	Oark High School	Animal Systems/CASE	$47,302.73
Junction City	Junction City High School	Management	$24,225.00
Lake Hamilton	Lake Hamilton High School	Construction	$100,517.49
Lawrence Co.	Walnut Ridge High School	Criminal Justice	$30,522.25
Lee County	Lee High School	Criminal Justice	$30,522.25
Lee County	Lee High School	Agri Power, Structural, & Tech Sys.	$61,217.00
Little Rock	Southwest High School	Biomedical Sciences PLTW	$48,933.88
Little Rock	Southwest High School	Pre-Engineering PLTW	$28,440.24
Little Rock	Hall High School	STEAM	$124,283.87
Malvern	Malvern High School	Hospitality & Tourism	$26,010.00
Maynard	Maynard High School	Criminal Justice	$30,522.25
McGehee	McGehee High School	Banking	$24,225.00
Osceola	Osceola High School	Management	$24,225.00
Ozark Mountain	Bruno/Pyatt High School	Criminal Justice	$30,522.25
Ozark Mountain	St. Joe High School	Criminal Justice	$30,522.25
Ozark Mountain	Western Grove High School	Criminal Justice	$30,522.25
Paris	Paris High School	Medical Office Management	$24,225.00

2020-2021 State Start-Up Awards			
Paris	Paris High School	CS Programming	$20,120.56
Piggott	Piggott High School	Marketing Business Enterprise	$27,795.00
Pottsville	Pottsville High School	Plant Systems	$82,216.25
Poyen	Poyen High School	Digital Marketing	$26,010.00
Prescott	Prescott High School	Animal Systems	$14,399.00
Pulaski Co.	Sylvan Hills High School	Internship/Youth Apprenticeship	$23,162.50
Pulaski Co.	Joe T. Robinson	Marketing Business Enterprise	$42,542.50
Pulaski Co.	Maumelle High School	Internship/Youth Apprenticeship	$23,162.50
Pulaski Co.	Maumelle High School	CS Programming	$20,120.56
Pulaski Co.	Sylvan Hills Middle School	Survey of Business	$17,850.00
Pulaski Co.	Mills Middle School	Survey of Business	$17,850.00
Rector	Rector High School	Medical Professions	$37,495.41
Riverside	Riverside High School	CS Programming	$20,120.56
Searcy	Searcy High School	Internship/Youth Apprenticeship	$23,162.50
Searcy	Searcy High School	Education and Training	$40,804.25
Sheridan	Sheridan High School	Marketing Business Enterprise	$42,542.50
Shirley	Shirley High School	CASE Animal Science	$26,673.23
Springdale	Don Tyson School of Innovation	AV/Tech & Film	$105,470.99
Springdale	Har-Ber High School	Engineering CAD	$31,859.77
Valley Springs	Valley Springs High School	CASE Plant Science	$32,146.27
Van Buren	Van Buren High School	CS Programming	$20,120.56
White Co. Ctrl	White Co. Central High School	Unmanned Aerial Systems	$40,691.41
White Co. Ctrl	White Co. Central High School	CASE Animal Science	$26,673.23
Whitehall	Whitehall High School High Sch	CASE Natural Resources	$33,991.10

Appendix C – Secondary Technical Centers

Secondary Technical Center	City
Arkansas Northeastern College Technical Center	Blytheville
Arkansas State University Beebe Regional Career Center	Beebe
Arkansas State University Mid-South Technical Center	West Memphis
Arkansas State University Mountain Home Technical Center	Mountain Home
Arkansas State University Newport IGNITE Academy	Newport
Arkansas State University Three Rivers Career Center	Malvern
Arkansas Tech University Career Center	Russellville
Black River Technical College Career & Technical Center	Pocahontas
Conway Area Career Center	Conway
Cossatot Community College of the University of Arkansas (CCCUA) Secondary Technical Center	DeQueen
East Arkansas Secondary Career Center	Forrest City
Jefferson Area Technical Career Center	Pine Bluff
Metropolitan Career and Technical Center	Little Rock
Monticello Occupational Education Center	Monticello
National Park Technology Center	Hot Springs
North Central Career Center	Leslie
NorthArk Technical Center	Harrison
Northeast Arkansas Career & Technical Center	Jonesboro
Northwest Technical Institute Secondary Career Center	Springdale
Ozarka College Technical Center	Melbourne
Phillips Community College Career and Technical Center	Helena
SAU Tech Career Academy	Camden
South Arkansas Community College Secondary Technical Center	El Dorado
Southeast Arkansas Community Based Education Center	Warren
UA-Pulaski Tech Career Center	North Little Rock
University of Arkansas Community College Batesville Career Center	Batesville
University of Arkansas Community College Morrilton Career Center	Morrilton
University of Arkansas Hope Texarkana Secondary Career & Technical Education Center	Hope
University of Arkansas at Rich Mountain Technical Center	Mena
Western Arkansas Technical Center	Fort Smith

Program of Study	Secondary Technical Centers
Advanced Manufacturing	7
Architectural CAD	2
Automotive Collision Repair Technology	7
Automotive Service Technology	17
Aviation Technology	1
Computer Science: Computer Engineering	3
Computer Science: Networking	10
Computer Science: Programming	4
Construction Technology	12
Criminal Justice	11
Culinary Arts	5
Cybersecurity	1
Electronics	2
Emergency Preparedness (Firefighting)	1
HVACR	6
Industrial Equipment Technologies	14
Medical Professions	29
Medium/Heavy Truck Technology	6
Power Equipment Technology	3
Precision Machine Manufacturing	8
Pre-Engineering	1
Unmanned Aerial Systems	2
Website Development	2
Welding	26
Grand Total	**180**

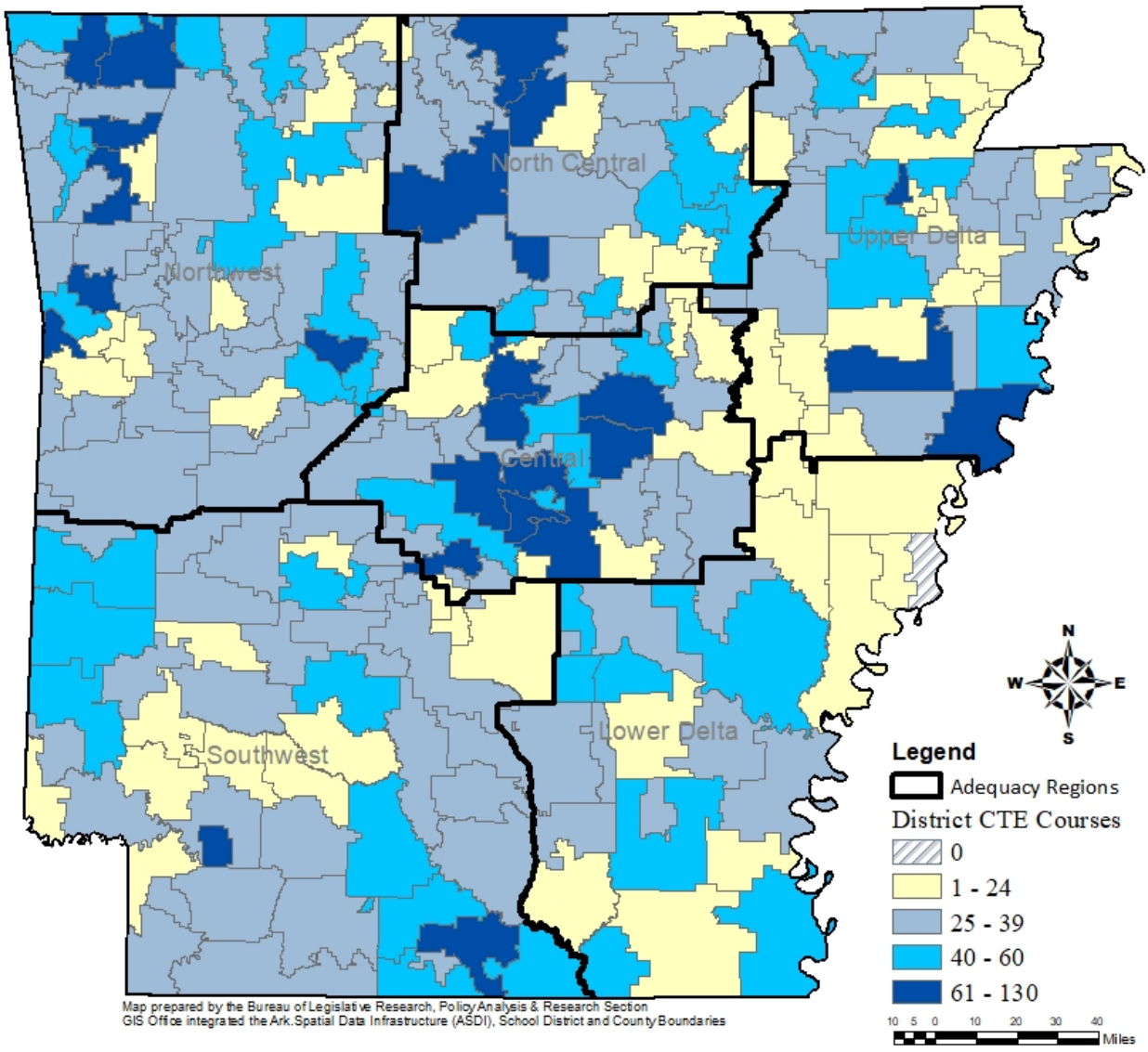
Appendix D – 2021 Programs of Study

OCCUPATIONAL AREA	CLUSTER	PROGRAM OF STUDY (POS)
Agriculture Science and Technology	Agriculture, Food, and Natural Resources	Agribusiness Systems
		Agricultural Power, Structural, and Technical Systems
		Animal Systems
		Food Products and Processing Systems
		Natural Resources/Environmental Service Systems
		Plant Systems
Business and Marketing Technology	Business Management and Administration	Medical Office Administration
		Office Administration
		Business Management
	Finance	Accounting
		Banking
		Business Finance
	Hospitality and Tourism	Hospitality and Tourism
	Marketing	Marketing Business Enterprise
		Retail Management
		Digital Marketing
	Transportation, Distribution and Logistics	Supply Chain and Logistics
Family and Consumer Sciences	Education and Training	Pre-Educator
	Arts, Audio/Video Technology and Communications	Clothing and Housing Design
	Hospitality and Tourism	Culinary Arts & Food Production, Management, & Services
	Human Services	Consumer Services
		Human and Social Services
		Nutrition Science and Dietetics
		Cosmetology
	Architecture and Construction	Architectural/CAD

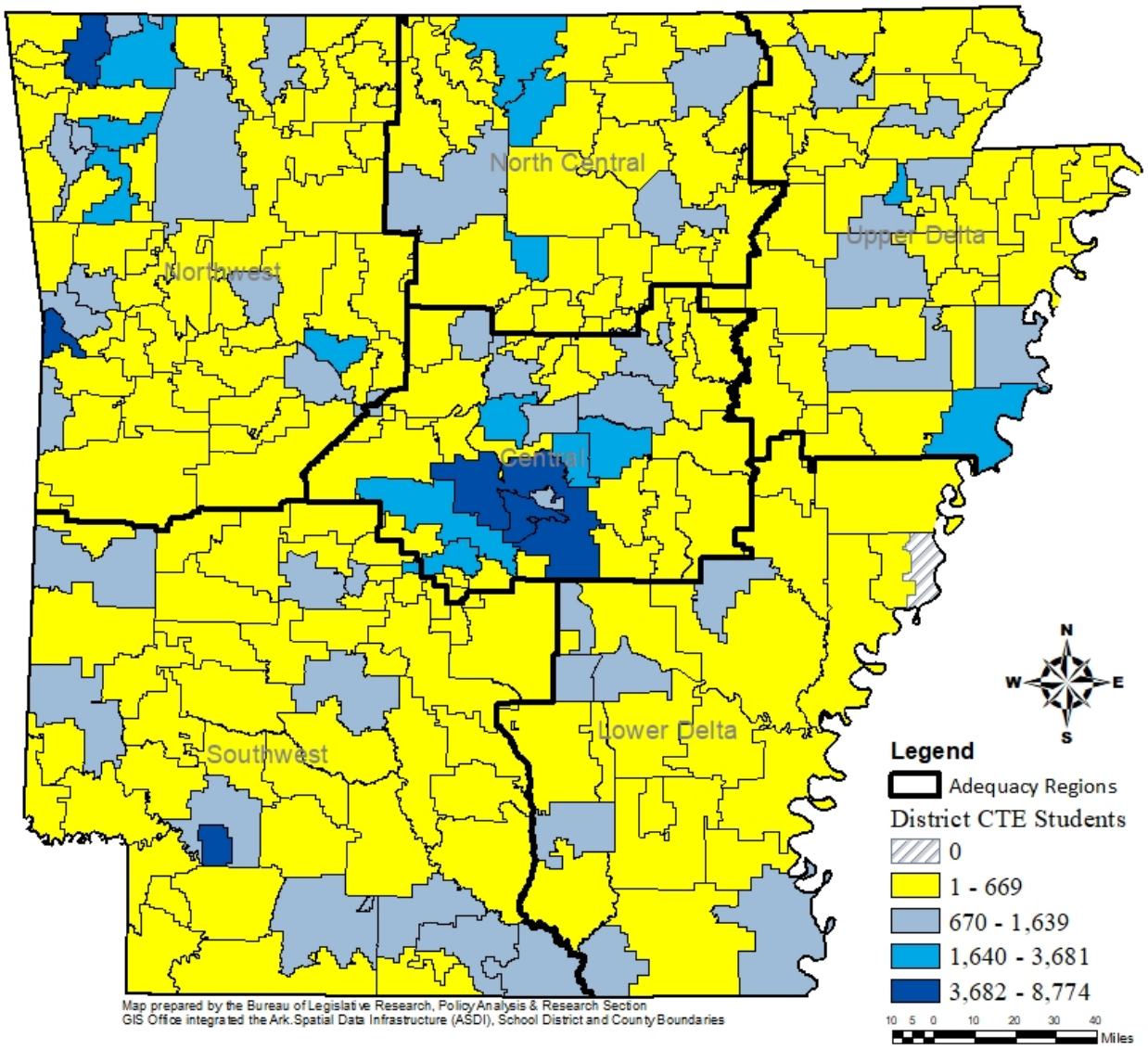
OCCUPATIONAL AREA	CLUSTER	PROGRAM OF STUDY (POS)
Science, Technology, Engineering, and Mathematics (STEM)		Engineering/CAD
	Health Sciences	Biomedical Sciences
	Information Technology	Computer Science: Artificial Intelligence & Machine Learning
		Computer Science: Computer Engineering
		Computer Science: Cybersecurity
		Computer Science: Data Science
		Computer Science: Game Development & Design
		Computer Science: Mobile Applications Development
		Computer Science: Networking
		Computer Science: Programming
		Computer Science: Robotics
		ASU UPSkill: Coding with Swift
		Website Development
	STEM (Science, Technology, Engineering, & Mathematics)	Automation and Robotics Technology
		Pre-Engineering
		Unmanned Aerial Systems
Trade and Industrial	Architecture & Construction	Construction Technology
		Heating, Ventilation, Air Conditioning, and Refrigeration (HVACR)
	Arts, A/V Technology & Communications	A/V Tech and Film
		Radio Broadcasting
		Television Production
		Advertising and Graphic Design
		Commercial Photography
	Government & Public Administration	JROTC: Air Force, Army, Marine, Navy
	Health Sciences	Medical Professions
		Sports Medicine
		Emergency Preparedness
	Law, Public Safety, Corrections & Security	Criminal Justice
	Manufacturing	Industrial Equipment Technologies
		Electronics
		Advanced Manufacturing
		Precision Machine Manufacturing
		Welding
	Transportation, Distribution and Logistics	Aviation Technology
		Medium/Heavy Truck Technology
		Power Equipment Technology
		Automotive Collision Repair Technology
		Automotive Service Technology

Appendix E – Maps Showing CTE Students and Courses

SCHOOL DISTRICTS WITH CTE COURSES FOR THE SY2020-2021



SCHOOL DISTRICTS WITH CTE STUDENTS FOR THE SY2020-2021



CHARTER SCHOOLS WITH CTE COURSES AND TOTAL NUMBER OF STUDENTS FOR THE SY2020-2021

LEA	Charter	CTE Students	CTE Courses
6040700	Academics Plus	156	13
0440700	Arkansas Arts Academy	219	12
0444700	Arkansas Connections Academy	345	15
6043700	Arkansas Virtual Academy	1,717	52
6047700	eStem Public Charter Schools	758	18
3545700	Friendship Aspire Academy SE Pine Bluff	1	1
6640700	Future School of Fort Smith	346	19
6052700	Graduate Arkansas	752	38
7240700	Haas Hall Academy	256	28
6050700	Jacksonville Lighthouse Academy	131	10
5440700	KIPP Delta Public Schools	193	5
6041700	LISA Academy	439	26
0442700	Resp. Ed Solutions Founders Classical Academies of Ark	99	13
6053700	Resp. Ed Solutions Premier High School of Little Rock	45	4
6062700	Resp. Ed Solutions Premier High School of No Little Rock	149	5
6060700	ScholarMade Achievement Place	258	35

Appendix F – Perkins Performance Measures' Methodology

FOUR-YEAR GRADUATION RATE

Numerator: The percentage of CTE concentrators who graduate high school, as measured by the four-year adjusted cohort graduation rate (defined in section 8101 of the Elementary and Secondary Education Act of 1965).

Denominator: Number of CTE concentrators who, in the reporting year, were included in the State's computation of its graduation rate as defined in the State's Consolidated Account- ability Plan pursuant to Section 1111(b)(2) of the ESSA.

Rationale: The Four-Year Graduation Rate is calculated using the same methodology as utilized for the Arkansas ESSA School Index which is detailed in federal Non-regulatory guidance.

Students in the adjusted cohort who met requirements for CTE concentrator status in one or more programs of study during the four-year period for the cohort are included as CTE concentrators as expected to graduate. These CTE concentrators with documentation of graduation (SIS Cycle 9 Graduates Table) are included in the numerator as actual graduates. Stu- dents can complete requirements in multiple concentrations. The adjusted cohort graduation rate is a non-duplicate count of CTE concentrators where each student is counted only once in the denominator even if the student has completed more than one concentration.

Clarifying Note: Only concentrators are included in this metric and concentrators are only counted once in the metric.

ACADEMIC PERFORMANCE

Numerator: CTE concentrator performance in the challenging State academic standards adopted by the State under section 1111(b)(1) of the Elementary and Secondary Education Act of 1965, as measured by the academic assessments in ELA, Math, and Science as described in section 1111(b)(2) of such Act.

Denominator: Number of CTE concentrators who took the ESEA assessments in ELA, Math, or Science whose scores were included in the program year in the State's computation of the annual measure for those subject tests.

Rationale: Section 113 (b)(2)(A)(ii) If the academic performance measure for Perkins V is aligned with the achievement and growth measures approved in Arkansas's ESSA plan; then, schools will have a unified focus on increased rigor and relevance in student learning opportunities and students will grow in their performance and increase their readiness for college, career, and community engagement. This is critical to a student-focused learning system. Utilizing a similar metric allows educators to support students in improving their readiness for success in the postsecondary opportunities they choose to pursue.

The proposed academic performance measures for ELA, Math, and Science includes the following: weighted achievement for grades 9 and10 ACT Aspire and DLM ELA, Math, and Science scores, value-added growth for grades 9 and 10 ACT Aspire and DLM ELA, Math, and Science scores, and weighted achievement for Grades 11 and 12 ACT Reading, Math, and Science scores.

- The weighted achievement formula for Academic Performance in ELA, Math, and Science includes the Grade 9 and Grade 10 weighted achievement used in the ESSA School Index, calculated for CTE Concentrators in Grades 9 and 10. Points are assigned to each readiness or performance level of

students. The number of students at each performance level are multiplied by the points earned and then summed and divided by the number of students tested (full academic year students only).

- Use In Need of Support (0 points), Close (0.5 point), Ready (1.0 point), Exceeds (1.0 or 1.25 points*) for ACT Aspire.
- Performance Levels 1 (0 points), 2 (0.5 point), 3 (1.0 point), 4 (1.0 or 1.25 points*) for DLM.

*Points for Exceeding (and Performance Level 4) depend on the number of students in the lowest readiness level compared to the number in the Exceeding level. If a school has the same number or fewer concentrators in the highest readiness level than in the lowest, the multiplier for the highest level is 1.0. If a school has more concentrators in the highest readiness level then for each concentrator in the highest level, over and above the number in the lowest level, the multiplier is 1.25.

- The value-added growth score used for ELA, Math, and Science includes the value-added growth score calculated for the CTE Concentrators in Grades 9 and 10.
- The weighted achievement formula for Academic Performance includes the Grade 11 and 12 weighted achievement using the following points assigned to proxy readiness levels based on students' best score (3-year best ACT score is used in Arkansas's approved ESSA School Quality Student Success Indicator).

ELA	Math	Science
• **ACT Score < 17** (In Need of Support, 0 points)	• **ACT Score < 17** (In Need of Support, 0 points)	• **ACT Score < 17** (In Need of Support, 0 points)
• **17 ≤ ACT score < 19** (Close, 0.5 points)	• **17 ≤ ACT score < 19** (Close, 0.5 points)	• **17 ≤ ACT score < 19** (Close, 0.5 points)
• **19 ≤ ACT Score < ACT College Readiness Benchmark** (Ready, 1.0 point)	• **19 ≤ ACT Score < ACT College Readiness Benchmark** (Ready, 1.0 points)	• **19 ≤ ACT Score < ACT College Readiness Benchmark** (Ready, 1.0 points)
• A**CT Score ≥ College Readiness Benchmark** (Exceeds, 1.0 or 1.25 points)	• **ACT Score ≥ College Readiness Benchmark** (Exceeds, 1.0 or 1.25 points)	• **ACT Score ≥ College Readiness Benchmark** (Exceeds, 1.0 or 1.25 points)
ACT College Readiness Benchmark ELA = 20	**ACT College Readiness Benchmark Math = 22**	**ACT College Readiness Benchmark Science = 23**

The Grades 11 and 12 weighted achievement is proposed for two reasons: (1) the majority of concentrations are earned by Grades 11 and 12 and (2) including Grades 11 and 12 ACT provides a mechanism for schools to improve the academic performance of each cohort of CTE Concentrators.

In order to provide incentive for schools to attend to improving students' achievement over their Grade 10 ACT Aspire scores, the calculation for each subject area Academic performance includes calculating weighted achievement for Grades 11 and 12 students using the ACT ELA, Math, and Science scores. For Grade 11 and Grade 12, the student's highest ACT score in each subject test is used to assign points (similar to the methodology used to determine weighted achievement). If a student does not have an ACT score in Grade 11 or 12 the students' prior Grade 10 ACT Aspire subject test score is used for the student.

Clarifying Note: Only concentrators are included in this metric and concentrators are only counted once in the metric.

POSTSECONDARY PLACEMENT

Numerator: The number of CTE concentrators who, in the second quarter after exiting from secondary education, are in postsecondary education or advanced training, military service or a

service program that receives assistance under title I of the National and Community Service Act of 1990 (42 U.S.C. 12511 et seq.), are volunteers as described in section 5(a) of the Peace Corps Act (22 U.S.C. 2504(a)), or are employed.

Denominator: The number of CTE concentrators who left secondary education during the reporting year.

Formula: Arkansas will report this data if verifiable data are available. At this time, verifiable data are not available in Arkansas at secondary.

NON-TRADITIONAL PROGRAM ENROLLMENT

Numerator: The number of CTE concentrators from underrepresented gender groups who became a CTE concentrator in a program of study leading to a non-traditional career field.

Denominator: Number of CTE concentrators who became a CTE concentrator in a CTE program of study leading to a non-traditional field.

Definition: The term "non-traditional fields" means occupations or fields of work for which individuals from one gender comprise less than 25 percent of the individuals employed in each such occupation or field of work.

Clarifying Note: Only concentrators are included in this metric. Concentrators are counted for Grades 9 - 12 for each concentration earned starting in their seventh grade year through the students' grade levels in the year in which this measure is reported.

PROGRAM QUALITY- ATTAINED RECOGNIZED POSTSECONDARY CREDENTIAL

Numerator: The number of CTE concentrators graduating from high school having attained a recognized postsecondary credential.

Denominator: The number of CTE concentrators who graduated from high school.[38]

[38] Arkansas Perkins V Plan, 2020