

March 23, 2017

The Condition of Participation, Outcomes, Expenditures and Funding of Secondary Area Career Centers in Arkansas

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Report commissioned by the
Arkansas Department of Career Education
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Overview:

This report summarizes analysis of student-level and budget data for secondary area career centers in Arkansas.¹ The purpose of the report is to shed light on what programs students participate in when attending secondary area career centers, and how their participation may relate to high school, postsecondary, and early labor market outcomes. In addition, the report uses original survey data from state directors of career and technical education from 23 states, to provide additional context for the state of funding secondary area career centers (and CTE, in general) in Arkansas. The report also aims to examine the relative expenditures per secondary area career center and consider whether funding mechanisms are consistent with established policy, as well as the range of costs associated with similar programs across different locations in the state. Data for this report span the academic years 2008 (AY08) through 2014 (AY14) and are representative of all students who attended secondary area career centers while in high school, as well as the budget data associated with the centers they attended.

Data Sources:

Data for this report come from three primary sources, the Arkansas Workforce Longitudinal Data System (AWLDS), the Arkansas Department of Career Education (ACE), and an original survey given to other state CTE directors by ACE. The AWLDS data are student-level data that include school enrollment, course taking (including CTE courses and concentrator data), demographics, high school graduation, college enrollment, and labor market data for students who were enrolled in Arkansas public high schools and secondary area career centers spanning the academic years of 2008 through 2014. Overall, there are just over 100,000 students represented in the AWLDS data. ACE contributed additional data on funding, expenditures, enrollment, and staffing at the centers and their satellite campuses located throughout Arkansas, as well as the results of a short survey sent to all 50 state CTE directors (the design of which was informed by the report author and other external stakeholders), related to how CTE and secondary area career centers are funded in other states. All three sets of data were analyzed and summarized to reveal patterns in outcomes, expenditures, funding, and funding structures. The results of this analysis are reported below.

¹ Note that the secondary area career centers referred to in this report are formally listed as Secondary Vocational Area Centers in legislation (Act 788 of 1985) when they were created, and are also referred to as Secondary Technical Centers in Policies and Procedures.

Abbreviated Findings & Recommendations:

Program Structure

- Program availability at centers, and those with high volumes of concentrators, is not completely aligned with larger policy aims regarding high growth industry and college enrollment.
- Redesign of CTE programs, by region and setting should be considered as a means to improve access, drive program updates, and promote economic development.
- Establish a curriculum development and revision process that is coordinated across the continuum of secondary area career centers, traditional high schools, workforce training, adult education, and two- and four-year institutions to create better alignment of curriculum with current and anticipated industry needs.
- An easily understood and implemented accountability system is necessary to ensure that all students are trained in a manner that meets industry and academic standards for career and/or college readiness.

Funding of CTE

- Funding to secondary area career centers appears disproportionate to their relative share of CTE full-time enrollments (FTEs) generated, enrollees, concentrators, and completers.
- Funding processes should be rationalized to ensure that Perkins funds and allocations for secondary area career centers better represent labor market demand.

Reporting & Data Collection

- Update policies and procedures related to financial accounting processes, and data collection.
- Inconsistency in data quality and reporting suggests future analyses will be warranted, once reporting processes are standardized.

CTE Concentrators & Outcomes in Secondary Area Career Centers

Analysis of educational and labor market outcomes for students who were CTE concentrators at secondary area career centers in Arkansas suggests that high school graduation, college enrollment, initial employment, and starting earnings are comparable to those for students who took CTE coursework in their traditional high school. Said another way, benefits of taking courses at a CTE secondary area career center do not appear to be meaningfully different than the benefits associated with taking CTE in a traditional high school setting. This analysis is based on individuals who completed concentrations in an approved program of study. There are clear differences in the outcomes by programs of study within each of 16 nationally recognized CTE clusters.

In Table 1, the student characteristics for CTE concentrators in centers are summarized within each of the 16 clusters. Students represented in this table are all part of the 10,163 concentrators who completed their concentration at a secondary area career center. This number contrasts with the 30,786 students who completed a concentration through a traditional high school during the same set of school years. Completers across these two settings mirror overall participation in CTE coursework across the two settings. For the students in this study, there were 36,068 students who ever took a CTE course in a secondary area career center in Arkansas, whereas there were over 86,000 students who took at least one CTE course in a traditional high school (some double counting is possible). These enrollment and concentration patterns reveal that student participation in centers is roughly 34% total CTE participation in high school, and a lower 24% of the share of concentrators. To put this in further perspective, it is helpful to recall that all secondary area career center participants enroll in one of 24 total CTE secondary centers or satellite campuses, compared to the roughly 298 traditional high schools around the state.

Student characteristics differ somewhat across clusters, but differences are consistent with what had been shown to be true for concentrators in traditional high schools. That is, some clusters enroll more male or female students systematically, but those differences are not related to whether they participate through a secondary area career centers or a traditional high school.

All outcomes for concentrators from secondary area career centers appear roughly in line with outcomes of similar concentrators at traditional high schools. For instance, graduation outcomes are nearly identical and all very high (above 90%) for all concentrators. For a few clusters, initial college enrollment is slightly higher at secondary area career centers for high-volume programs like human services, health services, and IT. Almost all of this difference is accounted for by the secondary area career centers' association with two-year colleges and is likely connected to having stronger dual enrollment programs because of this relationship. The initial earnings and employment of concentrators are largely comparable across secondary area career centers and traditional high schools. The only meaningful comparisons on these outcomes can be made in the programs with the highest participation across both settings (human services, health services, and IT). It may be, though it cannot easily be verified, that slightly higher wages in health services, for example, could be driven by differences in regional costs of living or the higher probability that someone in this field has earned an industry-recognized credential such as a certified nursing assistant (CNA) license which can allow a student to enter directly into the workforce at the age of 18 making over \$10.00 an hour on average (25-30% higher than the state minimum wage over the same time frame). Additionally, it is both a recognized industry credential and a recognized postsecondary credential of a Certificate of Proficiency (CP), and is a prerequisite for enrolling in most of the state's nursing programs for either a Licensed Practical Nurse (LPN), at the Technical Certificate (TC) level or for a Registered Nurse (RN) at the Associate's Degree (ADN) level.

Table 1: Summary Statistics for Concentrators by CTE Cluster in Technical Centers

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Agr., Food & Nat. Res.	Archit. & Constr.	Arts, AV Tech. & Commun.	Business & Mgmt.	Educ. & Training	Finance	Gov't & Pub. Admin.	Health Services
Male	0.855	0.965	0.5	0.666	0.333	0.617	0.66	0.333
White	0.916	0.896	0.609	0.695	0.809	0.647	0.54	0.654
Black	0.026	0.051	0.25	0.17	0.095	0.205	0.37	0.205
Latino	0.03	0.034	0.078	0.12	0	0.088	0.07	0.08
Lower Income	0.565	0.431	0.421	0.51	0.476	0.529	0.76	0.536
Special Ed.	0.157	0.206	0.125	0.141	0.095	0.088	0.22	0.041
ELL	0.026	0	0.031	0.056	0.047	0.029	0.03	0.049
Total CTE Courses	8.995	7.465	5.328	8.39	7.047	7.882	7.45	8.286
Graduated High School	0.921	0.931	0.937	0.893	0.857	0.97	0.92	0.948
Enroll Two-year	0.219	0.137	0.203	0.141	0.047	0.264	0.27	0.416
Enroll Four-year	0.083	0.068	0.093	0.07	0.19	0.058	0.04	0.132
Initial Quarterly Wage	1279.397	1164.449	701.302	982.77	685.683	835.858	821.915	843.349
Grade 11 ELA Z-score	-0.268	-0.066	0.239	-0.122	0.233	0.059	-0.405	0.26
N	228	58	64	141	21	34	100	408
	Hospital. & Tourism	Human Svcs.	Info. Tech.	Law, Safety & Secur.	Manufact.	Marketing Sales,&Svcs.	STEM	Transport. & Logistics
Male	0.543	0.231	0.389	0.421	0.852	0.429	0.812	0.934
White	0.695	0.612	0.666	0.645	0.719	0.504	0.724	0.701
Black	0.173	0.261	0.239	0.248	0.179	0.373	0.162	0.198
Latino	0.13	0.097	0.064	0.074	0.077	0.098	0.076	0.091
Lower Income	0.608	0.706	0.647	0.783	0.675	0.687	0.603	0.748
Special Ed.	0.13	0.155	0.105	0.161	0.219	0.122	0.115	0.279
ELL	0.021	0.064	0.031	0.039	0.039	0.061	0.044	0.054
Total CTE Courses	8.478	8.731	8.86	8.027	8.296	8.408	8.647	8.084
Graduated High School	0.913	0.915	0.924	0.944	0.904	0.894	0.916	0.917
Enroll Two-year	0.26	0.229	0.224	0.46	0.42	0.213	0.29	0.423
Enroll Four-year	0.108	0.077	0.151	0.082	0.119	0.058	0.189	0.079
Initial Quarterly Wage	1348.001	987.896	924.176	1070.136	1319.42	1082.104	1016.228	1372.358
Grade 11 ELA Z-score	0.062	-0.149	-0.005	-0.2	-0.473	-0.124	-0.016	-0.534
N	46	2725	3742	254	834	426	406	676

Notes: Mean values of key variables are shown for all students in the 9th grade cohorts who entered in the fall semesters of 2007 through 2009

Funding Analysis

In the funding analysis, budget data from all secondary area career centers were analyzed. The data include outlays and expenditures (some by category) as well as information on enrollment and staffing by program of study and center. However, analyses were limited to those data that were collected consistently over time. The goal of the analysis was to understand how expenditures and funding allocations appear to have been happening, relative to what is stipulated by state statute and related policies and procedures. A secondary goal was to project how funding would be impacted if different funding models were adopted to fund secondary area career centers.

First, I demonstrate the alignment between funding over the last seven years with student enrollment and staffing levels (by center and program of study) over the same period. When interpreting this data it is important to note that while the existing statute stipulates that centers receive funding at a rate of \$3,250 per student, policies and procedures state that it is \$3,250 per Full Time Equivalent (FTE). A FTE is considered the equivalent of one student attending class for six class periods per day per year. More simply put, one student attending a three period class the full year would be equal to one-half FTE. I then considered what could happen under alternative approaches to funding, including: what would happen if funding were based on the state average cost per FTE, or if centers were funded at a rate of \$3,250 per FTE, if funding were based on the state average cost per enrollment, if funding was \$3,250 per enrolled student, and lastly if funding were limited to allowable expenditures as outlined in ACE policy. The outcomes of these potential alternative models are discussed in more detail below.

Arkansas Secondary Area Career Center Funding

In Arkansas secondary area career centers receive funding from local, state, and federal sources. At the local level, secondary area career centers receive pass through funds from feeder schools from the foundation funding that those schools receive based on the state funding matrix formula or through partnerships with local business and industry. However, the bulk of the funding for secondary area career centers comes from the state level through the Vocational Center Aid Fund (VCAF). An additional source of funding available for secondary area career centers to apply for and receive is State Start-up Funds. Analysis of the VCAF, budget outlays and expenditures, enrollment, and staffing at secondary area career centers for the fiscal years spanning AY08 through AY14 reveal a number of important observations.

Currently in Arkansas all K-12 schools are funded using a funding model referred to as the funding matrix. Within the matrix funds are statutorily based on a per student funding basis. The formula for the matrix is based on the needed resources such as teachers, books, counselors, transportation, etc. that a school needs to provide students with an adequate and equitable education. Within this matrix formula there are no funds directly specified to support career and technical education programs for K-12 students. While there is funding for teachers of elective or non-core courses like art, music, and physical education, and some schools use it for supporting their CTE programs, nowhere does it state that any of these funds have to be used to pay for CTE programs explicitly.

To attempt to address this issue the General Assembly created the VCAF which provides approximately \$20.1 million a year, or a total of \$147.3 million across the years analyzed in this study, to ACE for secondary CTE programs offered at secondary area career centers and their satellite campuses across the state. ACE distributes that funding at a rate of \$3,250 per FTE as set forth in policies and procedures based on the previous year's enrollment, then divides any remaining funds amongst the centers based on their number of FTEs generated. This funding structure has gone unchanged since their establishment in 2003. Table 2 below is an overview of FTEs and enrollments and corresponding expenditures and funding based on a per-FTE and per-enrollment basis.

In addition to the \$20.1 million a year VCAF exclusively for secondary area career centers, the General Assembly also appropriates approximately \$2.37 million in State Start-Up Funds to help purchase minimum level equipment for new CTE programs. State Start-Up Funds can be applied for by school districts, education service cooperatives, and secondary area career centers. Federal funding for CTE at any location across the state including secondary area career centers comes from the Carl D. Perkins Career and Technical Education Act, more commonly referred to simply as Perkins Funds. Perkins funding is available to school districts, consortia, and secondary area career centers. Perkins funding

unfortunately has stayed fairly level over time at approximately \$6.5 million a year going to secondary level CTE programs to improve or enhance existing CTE programs above the minimum state standard.

Table 2. Aggregate financials by secondary center, 2008 through 2014.

CENTER	TOTALS AY08-AY14				EXPENDITURES		VCAF FUNDING	
	FTE'S	ENROLLMENTS	EXPENDITURES	TOTAL VCAF	PER FTE	PER ENROLLMENT	PER FTE	PER ENROLLMENT
ANC	506	1,581	\$3,854,742	\$3,284,713	\$7,614	\$2,439	\$6,488	\$2,078
ASU MID-SOUTH	587	1,278	\$4,699,268	\$4,749,803	\$8,004	\$3,678	\$8,090	\$3,718
ASU SEARCY	957	2,578	\$6,344,052	\$6,604,365	\$6,630	\$2,461	\$6,902	\$2,562
ATCC	1,264	3,251	\$9,725,810	\$8,488,484	\$7,696	\$2,992	\$6,717	\$2,611
CACC	2,097	7,156	\$14,878,708	\$14,438,814	\$7,094	\$2,079	\$6,884	\$2,018
COTO	725	2,164	\$4,763,122	\$4,983,213	\$6,569	\$2,201	\$6,873	\$2,303
DMESC	398	1,242	\$2,605,609	\$2,488,245	\$6,543	\$2,099	\$6,248	\$2,004
ESCC	139	445	\$1,629,066	\$910,965	\$11,711	\$3,665	\$6,549	\$2,049
JATCC	609	1,299	\$4,735,920	\$4,696,136	\$7,778	\$3,647	\$7,712	\$3,617
METRO	1,560	3,203	\$15,671,722	\$13,106,350	\$10,048	\$4,894	\$8,403	\$4,093
MONTICELLO OEC	623	1,890	\$4,354,397	\$4,241,271	\$6,991	\$2,304	\$6,809	\$2,244
NCCC	248	845	\$2,159,796	\$1,876,203	\$8,714	\$2,557	\$7,570	\$2,222
NEACTC	1,429	3,374	\$10,159,793	\$9,941,187	\$7,110	\$3,012	\$6,957	\$2,947
NPTC	934	2,804	\$5,496,171	\$7,076,183	\$5,882	\$1,960	\$7,573	\$2,524
NTC	447	908	\$3,367,459	\$3,375,116	\$7,533	\$3,711	\$7,551	\$3,719
NTI	686	1,570	\$6,877,575	\$5,397,757	\$10,023	\$4,382	\$7,866	\$3,439
PCCUA CTC	760	4,449	\$6,742,649	\$5,645,574	\$8,872	\$1,516	\$7,428	\$1,269
RVTC	494	2,034	\$3,433,487	\$3,392,724	\$6,947	\$1,688	\$6,864	\$1,668
SALINE CO CC	781	1,562	\$5,583,699	\$5,382,793	\$7,152	\$3,576	\$6,894	\$3,447
SAU TECH	1,022	2,594	\$7,192,780	\$7,047,848	\$7,038	\$2,773	\$6,896	\$2,717
SEACBEC	1,106	4,956	\$8,286,946	\$7,690,874	\$7,491	\$1,672	\$6,952	\$1,552
SOUTHARK	458	916	\$3,495,257	\$3,084,268	\$7,636	\$3,818	\$6,738	\$3,369
TEXARKANA CTC	1,253	3,767	\$9,435,124	\$8,783,885	\$7,530	\$2,505	\$7,011	\$2,332
WATC	1,430	3,009	\$10,815,226	\$10,640,859	\$7,565	\$3,594	\$7,443	\$3,536
TOTAL	20,513	58,868	\$156,308,378	\$147,327,630	\$7,620	\$2,655	\$7,182	\$2,503

Notes: Full names for career centers can be found in the appendix Table A.1. Abbreviations are used in this table to increase the volume of data on a single page.

Analysis of overall expenditures as a state

Analysis of expenditures for AY08 through AY14 shows that 24 secondary centers reported a total of roughly \$156.3 million in expenditures to the Arkansas Department of Career Education for reimbursement from the VCAF. Expenditures were reported for each of the programs of study as well as a variety of other costs. As seen in Table 3 below, these other costs included categories such as administration, maintenance and operations, tuition, buildings, transportation, and others. On average, during the study period, expenditures for program specific activities represented 64.7% (~\$101.2 million) of the total expenditures, while the remaining 35.3% (~\$55.1 million) was spent on non-program of study specific costs. Of the 35.3% of expenditures spent on non-program specific costs, almost 30% was reported in the categories of administration and maintenance and operations (M&O). Administration costs were about \$34.3 million (22%) of the total expenditures reported, and M&O costs were nearly \$12.7 million (7.5%). The percentage of the total expenditures represented by these non-program specific costs varied greatly by year and by center, for example administration costs ranged from 0% to over 50% while M&O ranged from 0%-25%. This resulted in some years with centers having over 60% of their expenditures in non-program specific costs.

Table 3. Aggregate categorical costs breakdown for secondary centers.

COST AREA	TOTAL EXPEND	% OF TOTAL EXPEND
ADMINISTRATION	\$37,276,240	23.8%
BUILDING (1 CENTER)	\$2,454,912	1.6%
INDIRECT COSTS	\$1,223,460	0.8%
INSTRUCTIONAL SUPPORT (1 CENTER)	\$250,722	0.2%
INTERNSHIPS ACROSS PROGRAMS	\$148,132	0.1%
M&O	\$11,715,812	7.5%
SECURITY (1 CENTER)	\$1,341,047	0.9%
SITE IMPROVEMENT (1 CENTER)	\$20,650	0.0%
TECH PREP (1 CENTER)	\$81,659	0.1%
TRANSPORTATION	\$282,766	0.2%
TUITION AY12 AND AY13 (1 CENTER)	\$367,651	0.2%
TOTAL NON-POS EXPENDITURES	\$55,163,051	35.3%
PROGRAM OF STUDY EXPENDITURES	\$101,200,210	64.7%
TOTAL EXPENDITURES	\$156,363,261	

To fund center expenditures, secondary centers receive the vast majority of their funding from the VCAF, administered by ACE, with a small portion coming from other local, state, and federal sources. During the study period, ACE paid secondary centers from the VCAF, a total of \$147.3 million or 94.3% of the total \$156.3 million in expenditures reported by secondary centers. This left a total of \$8.9 million or 5.7% of reported expenditures not paid for by VCAF funds that centers had to use other sources of funding mentioned earlier to make up the difference.

To put this 5.7% shortfall in perspective, it is important to reflect on the policies that govern secondary area career centers funding more explicitly. The Special Policies and Procedures for Secondary Technical Centers issued by ACE, section 4.A.1 states that, “The management, maintenance, and operation of a secondary technical center shall be the responsibility of the sponsoring institution or entity in accordance with the policies established by the State Board of Career Education (SBCE).” Had this statute (4.A.1 above) been followed prescriptively, there would have been a surplus of \$2.7million in VCAF funds just from the M&O costs, and with administration/management costs not included there would be a total surplus of \$37 million in VCAF funds. So if section 4.A.1 had been followed, secondary area career centers would not be reporting underfunding by VCAF funds, and could have actually spent the additional \$37 million surplus on programs of study specific activities, additional programs of study, additional faculty, new equipment, recruitment, or additional students.

Analysis of overall expenditures by center

The total expenditures for program of study specific and non-program of study specific costs for each of the centers are presented below in Table 4. The total expenditures as well as the percentage of total expenditures spent on non-program of study costs varied significantly during the study period. On the lower end, a center spent as little as 11.5% of their funds on non-program specific costs while others spent between 44.5-49.5% of their funds on such costs, with these values varying by year and by center.

Table 4. Total expenditures by center for program of study and non-program of study costs.

TOTAL, POS, AND NON POS EXPENDITURES AY08-AY14					
CENTER	TOTAL	POS EXP	%POS EXP	NON POS EXP	%NON POS EXP
ANC	\$3,854,742	\$3,268,021	84.8%	\$586,721	15.2%
ASU MID-SOUTH	\$4,699,268	\$3,109,762	66.2%	\$1,589,506	33.8%
ASU SEARCY	\$6,344,052	\$4,997,394	78.8%	\$1,346,658	21.2%
ATCC	\$9,725,810	\$5,947,730	61.2%	\$3,778,080	38.8%
CACC	\$14,878,708	\$8,263,692	55.5%	\$6,615,016	44.5%
COTO	\$4,763,122	\$3,418,633	71.8%	\$1,344,489	28.2%
DMESC	\$2,605,609	\$1,706,267	65.5%	\$899,342	34.5%
ESCC	\$1,629,066	\$996,654	61.2%	\$632,412	38.8%
JATCC	\$4,735,920	\$2,685,194	56.7%	\$2,050,726	43.3%
METRO	\$15,671,722	\$8,697,217	55.5%	\$6,974,505	44.5%
MONTICELLO OEC	\$4,354,397	\$2,820,387	64.8%	\$1,534,010	35.2%
NCCC	\$2,159,796	\$1,358,284	62.9%	\$801,512	37.1%
NEACTC	\$10,159,793	\$6,158,427	60.6%	\$4,001,366	39.4%
NPTC	\$5,496,171	\$4,517,946	82.2%	\$978,225	17.8%
NTC	\$3,367,459	\$2,981,641	88.5%	\$385,818	11.5%
NTI	\$6,877,575	\$4,494,814	65.4%	\$2,382,761	34.6%
PCCUA CTC	\$6,742,649	\$5,526,018	82.0%	\$1,216,631	18.0%
RVTC	\$3,433,487	\$2,185,209	63.6%	\$1,248,278	36.4%
SALINE CO CC	\$5,583,699	\$3,742,312	67.0%	\$1,841,387	33.0%
SAU TECH	\$7,192,780	\$4,873,989	67.8%	\$2,318,791	32.2%
SEACBEC	\$8,286,946	\$4,180,978	50.5%	\$4,105,968	49.5%
SOUTHARK	\$3,495,257	\$2,752,034	78.7%	\$743,223	21.3%
TEXARKANA CTC	\$9,435,124	\$5,417,737	57.4%	\$4,017,387	42.6%
WATC	\$10,815,226	\$7,044,987	65.1%	\$3,770,239	34.9%
TOTAL	\$156,308,378	\$101,145,327	64.7%	\$55,163,051	35.3%

Notes: Full names for career centers can be found in the appendix Table A.1. Abbreviations are used in this table to increase the volume of data on a single page.

Analysis of overall expenditure by FTE

During the seven years covered by this report, there were a total of 20,513.4 FTEs generated by the 24 centers, for an average of approximately 2930.5 FTEs per year. As with the other expenditures, the number of FTEs varied substantially among centers and across time as well as by program of study. The average number of FTEs generated by a center each year was about 120 FTEs with a center producing as few as 15-16 FTEs per year to a center generating a high of over 300 FTEs per year. The average expenditure per FTE generated was \$7,623 with a low of \$7,114 per FTE in AY12 to a high of \$8,075 per FTE in AY09.

Table 5. Full-time equivalents generated and expenditures by full-time equivalents.

CENTER	#FTE GENERATED PER YEAR			CENTER EXPENDITURES PER FTE		
	AVG	MIN	MAX	AVG	MIN	MAX
ANC	72.3	51.8	84.4	\$7,792	\$6,075	\$10,912
ASU MID-SOUTH	83.9	47.5	110.5	\$8,686	\$3,555	\$14,997
ASU SEARCY	136.7	117.1	159.6	\$6,657	\$6,185	\$7,034
ATCC	180.5	154.6	205.9	\$7,780	\$6,041	\$8,884
CACC	299.6	280.2	323.1	\$7,055	\$5,588	\$10,153
COTO	103.6	81.5	118	\$6,584	\$5,398	\$7,233
DMESC	56.9	43.8	68.4	\$6,331	\$0	\$9,285
ESCC	19.9	13.6	40.6	\$12,232	\$6,536	\$20,033
JATCC	87	70.3	114	\$8,064	\$5,821	\$10,996
METRO	222.8	187.8	280.1	\$10,182	\$8,212	\$11,776
MONTICELLO OEC	89	81.9	101	\$7,008	\$6,037	\$7,911
NCCC	35.4	22	40.5	\$9,038	\$6,896	\$13,302
NEACTC	204.1	177	227.1	\$7,126	\$6,406	\$8,786
NORTHARK	63.9	55.8	70.8	\$7,567	\$7,016	\$9,136
NPTC	133.5	103.5	162.9	\$6,001	\$0	\$7,860
NTI	98	81.4	114.3	\$10,172	\$6,961	\$16,086
PCCUA CTC	108.6	85	140.6	\$8,905	\$7,774	\$10,817
RVTC	70.6	57.6	79.9	\$7,054	\$6,082	\$8,691
SALINE CO CC	111.5	104.8	128	\$7,182	\$5,708	\$8,292
SAU TECH	146	122.8	170.7	\$7,023	\$6,388	\$8,077
SEACBEC	158	148.3	172.2	\$7,534	\$6,214	\$8,622
SOUTHARK	65.4	55.5	73.8	\$7,721	\$2,772	\$10,858
TEXARKANA CTC	179	118.4	254.4	\$7,730	\$6,335	\$9,073
WATC	204.2	177.8	219.3	\$7,586	\$6,584	\$8,232

Notes: Full names for career centers can be found in the appendix Table A.1. Abbreviations are used in this table to increase the volume of data on a single page.

When focusing on the center level it is clear that the average expenditures per FTE varied greatly across centers and within centers over time. For instance, for one center in AY12 the lowest average expenditure per FTE was \$2,772 while that same year at a different center the highest average expenditure per FTE was \$9,877. The largest spread in the expenditures per FTE within a given center occurred in AY09 when the lowest cost per FTE was \$5,920 and the highest cost per FTE was \$20,033. Over time, these wide swings have started to stabilize in recent years. At present, the cost per FTE on the low end is hovering between \$5,700 and \$6,100 and a high end hovering between \$11,300 and \$11,600. In many instances in the past, the large average expenditure per FTE was related to the startup of a new program of study at a center. However, new programs are not the only explanation for high average costs per FTE, as in other instances it was due to very high non-program specific costs such as administration or M&O. Another reason for some years to see such large swings in FTE costs could be due to programs that were started at a center and never had any enrollment so the cost per FTE went up even higher for the center overall. An example of this seen at a center that started a Warehouse & Distribution program that reported \$177,113 in expenditures in one year and \$65,844 the next for a two year total of \$242,957, but there were no students ever reported as being enrolled in either year. The first year of the program the center's average expenditure per FTE was \$14,983. Without this program that had no students the average would have been \$11,715/FTE saving \$3,267/FTE just in that year alone.

Analysis of expenditures by Program of Study

Over the course of the study, the 24 secondary centers offered over 40 different of programs of study on their main campuses and satellite campuses. The number of programs offered by each center ranged from as few as 3 to as many as 14 in some years.

Table 6. Average number of programs of study year and secondary center.

CENTER	NUMBER OF POS THAT GENERATED FTE						
	AY08	AY09	AY10	AY11	AY12	AY13	AY14
ANC	5	6	7	7	6	6	6
ASU MID-SOUTH	6	5	6	8	8	7	6
ASU SEARCY	9	10	10	10	10	8	8
ATCC	11	11	10	9	10	10	9
CACC	8	8	9	9	9	8	8
COTO	7	7	7	7	7	6	7
DMESC	7	7	9	9	9	7	8
ESCC	5	5	5	4	6	4	3
JATCC	5	5	5	5	5	5	5
METRO	14	13	11	11	11	11	11
MONTICELLO OEC	7	7	7	7	7	8	8
NCCC	6	5	5	7	7	6	5
NEACTC	12	13	12	12	11	12	12
NPTC	8	7	7	7	N/A	7	7
NTC	11	10	8	9	9	8	7
NTI	10	7	6	6	6	6	7
PCCUA CTC	6	7	6	8	8	8	9
RVTC	7	7	7	7	7	7	5
SALINE CO CC	6	6	4	4	4	4	4
SAU TECH	8	8	7	6	6	6	6
SEACBEC	10	10	10	9	9	10	9
SOUTHARK	5	5	5	6	6	6	5
TEXARKANA CTC	11	11	11	10	9	7	7
WATC	10	10	10	10	10	10	10
TOTAL	194	190	184	187	180	177	172

Notes: Full names for career centers can be found in the appendix Table A.1. Abbreviations are used in this table to increase the volume of data on a single page.

Table 7, below provides a list of the various programs of study offered, the number of secondary centers that offered each of the programs, the FTEs generated and expenditures overall and the average per year, as well as the average expenditures per FTE overall with the highest and lowest costs.

Table 7. Average number of programs of study, full-time equivalents, and expenditures during study period.

POS	# of Centers with POS	FTEs Generated AY08-AY14		POS Expenditures		Average Expenditures Per FTE		
		Total	Average	Total	Average	Overall	Low	High
ADVANCED MANUFACTURING	5	194.4	27.8	\$1,961,046	\$280,149	\$10,088	\$6,607	\$19,538
ADVERTISING DESIGN	4	455.5	65.1	\$1,825,197	\$260,742	\$4,007	\$3,312	\$4,701
AGRICULTURAL BUSINESS	1	27.3	4.5	\$366,339	\$52,334	\$13,444		
AUDIO, VIDEO, TECH & FILM	6	392.2	56	\$1,985,182	\$283,597	\$5,062	\$3,278	\$9,320
AUTO COLLISION REPAIR	11	1116.3	159.5	\$5,610,050	\$801,436	\$5,026	\$3,246	\$10,519
AUTO SERVICE TECHNOLOGY	17	1720.7	245.8	\$8,717,337	\$1,245,334	\$5,066	\$475	\$9,905
AVIATION TECHNOLOGY	3	77.1	11	\$624,809	\$89,258	\$8,104	\$632	\$29,054
BANKING	2	92.9	13.3	\$561,240	\$80,177	\$6,045	\$5,743	\$6,119
BUSINESS	3	215.2	30.7	\$1,076,183	\$153,740	\$5,002	\$1,981	\$7,416
CASHIER/CHECKER	1	49.2	7	\$377,081	\$53,869	\$7,664		
COMPUTER ENGINEERING	15	1005.1	143.6	\$5,606,063	\$800,866	\$5,578	\$2,053	\$13,007
CONSTRUCTION TECHNOLOGY	12	649.3	92.8	\$3,808,750	\$544,107	\$5,866	\$3,384	\$31,942
COSMETOLOGY	14	2166.2	309.5	\$8,980,373	\$1,282,910	\$4,146	\$2,419	\$9,251
CRIMINAL JUSTICE	13	1298	185.4	\$5,208,616	\$744,088	\$4,013	\$2,427	\$7,000
CULINARY ARTS	4	386.3	55.2	\$1,551,020	\$221,574	\$4,015	\$2,847	\$6,610
DATA DESIGN	1	3.8	1.3	\$46,467	\$11,617	\$12,228		
DIESEL TECHNOLOGY	2	116.8	16.7	\$812,822	\$116,117	\$6,959	\$5,491	\$6,959
DIGITAL COMMUNICATIONS	2	157.1	22.4	\$347,679	\$49,668	\$2,214	\$3,537	\$1,685
DRAFTING & DESIGN	11	662.4	94.6	\$3,689,863	\$527,123	\$5,570	\$2,481	\$9,392
EAST	1	108.3	15.5	\$380,928	\$54,418	\$3,519		
EDUCATION & TRAINING	3	202.7	29	\$989,934	\$141,419	\$4,884	\$3,336	\$35,565
ELECTRONICS	1	56.8	8.1	\$532,825	\$76,118	\$9,389		
FOOD PRODUCTION, MAN. & SERV.	3	107.9	15.4	\$655,130	\$93,590	\$6,072	\$2,884	\$9,162
FURNITURE MANUFACTURING	1	38	5.4	\$402,521	\$67,087	\$10,593		
GRAPHIC COMMUNICATIONS	3	267.9	38.3	\$4,053,602	\$579,086	\$15,131	\$9,176	\$35,532
HOSPITALITY	2	104.7	15	\$655,913	\$93,702	\$6,268	\$3,989	\$12,662
HVAC	2	43	6.1	\$272,583	\$38,940	\$6,347	\$4,457	\$6,595
INDUSTRIAL EQUIPMENT MAINT	5	196.2	28	\$1,233,270	\$176,181	\$6,287	\$4,778	\$8,261
INTERNSHIP	5	420.8	60.1	\$1,655,456	\$236,494	\$3,935	\$2,230	\$7,085
MACHINE TOOL TECHNOLOGY	6	342.9	49	\$1,820,688	\$260,098	\$5,310	\$3,875	\$8,212
MAJOR APPLIANCE REPAIR	1	38.9	13	\$202,289	\$67,430	\$5,200		
MANAGEMENT	1	20.5	5.1	\$169,707	\$56,569	\$8,299		
MEDICAL PROFESSIONS	23	5355.1	765	\$20,514,235	\$2,930,605	\$3,831	\$2,290	\$7,426
PETROLEUM TECHNOLOGY	2	16.7	2.4	\$239,303	\$34,186	\$14,373	\$13,184	\$16,455
PLANT SYSTEMS-HORTICULTURE	4	201.6	28.8	\$1,170,156	\$167,165	\$5,804	\$371	\$11,839
POWER EQUIPMENT TECHN	4	226.1	32.3	\$1,325,600	\$189,371	\$5,864	\$4,413	\$11,535
PRE-ENGINEERING	6	75.9	10.8	\$536,526	\$76,647	\$7,069	\$0	\$43,016
RENEWABLE ENERGY	3	31.9	4.6	\$725,156	\$103,594	\$22,732	\$16,388	\$75,556
WAREHOUSE & DISTRIBUTION	1	0	0	\$242,957	\$121,479			
WEB DESIGN	2	79.4	11.3	\$237,081	\$33,869	\$2,988	\$2,652	\$5,299
WELDING	18	1793.3	256.2	\$10,028,233	\$1,432,605	\$5,592	\$4,428	\$11,172
Total		20513.4	2941.5	\$101,200,210	\$14,629,362	\$4,933		

In the first column after the program of study name, the number of centers at which the program was offered is provided. Of the programs offered by the fewest centers, there were 9 programs (22%) (the bright red cells) offered at only 1 center, while the 9 (22%) (the blue to dark blue cells) most offered programs were offered by 11 to 23 of the 24 centers. The top 5 offered programs of study were Medical Professions (23 centers), Welding (18 centers), Auto Service Technology (17 centers), Computer Engineering (15 centers), and Cosmetology (14 centers). Total expenditures for these 5 programs totaled \$53.8 million or 53.2% of the total \$101.2 million expenditures spent on specific programs of study, and 34.4% of the \$156.3 million in total expenditures.

In addition to chronicling the relative presence of and expenditures on specific programs of study, it is also important to contextualize these offerings with respect to projected demand in the labor market. For example, 14 centers offered cosmetology, generating 2,166 FTEs (309 per year) or 10.5% of total FTEs generated, costing on average \$4,146 per FTE (\$2,419-\$9,251/FTE) for a total \$8.9 million or 9% of the total reported program of study specific expenditures over the course of the study. In contrast, only 5 centers offered advanced manufacturing as a program of study during the same period. A corresponding 194.4 FTEs (27.8 per year), or less than 1% of the total FTEs generated across all programs and centers during the study period were generated in advanced manufacturing at an average cost of \$10,088 per FTE (\$6,607-\$19,538/FTE) for a total of \$1.9 million or 1.9% of the total reported program of study specific expenditures by centers. Including non-program specific costs, the total spent on advanced manufacturing accounted for only 1.0% of the over \$156.3 million in expenditures reported by centers.

The potential misallocation of program resources is amplified when compared with the projected demand for these jobs in Arkansas. A cursory look at www.discover.arkansas.gov provides a wide volume of data including the base employment and projected employment from 2012 to 2022 for the industries and occupations in the state. From this site one can find that from 2012-2022 the number of jobs for personal appearance technicians (cosmetologists) was 3,010 in 2012 with an expected number of jobs in 2022 of 3,480 or an increase of 470 jobs over 10 years for an average of 47 new jobs per year. However, looking at manufacturing jobs in the state for the same timeframe it is clear that there were 90,222 manufacturing jobs in 2012 with an expected number of jobs in 2022 of 94,518 or an increase of 4,296 jobs over 10 years for an average need of 430 new employees per year. These comparisons are just one example of how program supply at secondary centers may be out of line with demonstrated local labor market demand.

Hypothetical Funding Situations

The left half of Table 8 below shows the actual FTEs and enrollments generated, total expenditures, and total VCAF funding to the centers over the course of this study. While on the right half of Table 8, a series of five hypothetical funding options are presented. The first example is if funding stayed based on VCAF's average funding per FTE generated of \$7,182, the second is if funding was based on \$3,250 per FTE generated, the third and fourth examples are presented as if funding were based on the number of enrollments instead of FTEs, using the state average funding of \$2,503 per enrollment and using \$3,250 per enrollment. In the fifth and last example what would funding look like if VCAF funding was only used to fund expenditures directly related to an allowable specific program of study as outlined in policy.

Table 8. Total full-time employees, enrollments, and expenditures, actual and for several hypothetical funding models

CENTER	ACTUAL TOTALS AY08-AY14				HYPOTHETICAL FUNDING BY FTE & ENROLLMENT				ONLY FUNDING POS SPECIFIC EXPENDITURES
	FTE'S	ENROLLMENTS	EXPENDITURES	VCAF TOTAL FUNDING	STATE AVG \$7,182/FTE	\$3,250/FTE ONLY	STATE AVG \$2,503/ ENROLLMENT	\$3,250/ ENROLLMENT ONLY	
ANC	506	1,581	\$3,854,742	\$3,284,713	\$3,635,897	\$1,645,313	\$3,955,992	\$5,136,625	\$3,268,021
ASU MID-SOUTH	587	1,278	\$4,699,268	\$4,749,803	\$4,216,563	\$1,908,075	\$3,197,583	\$4,151,875	\$3,109,762
ASU SEARCY	957	2,578	\$6,344,052	\$6,604,365	\$6,872,474	\$3,109,925	\$6,452,734	\$8,378,500	\$4,997,394
ATCC	1,264	3,251	\$9,725,810	\$8,488,484	\$9,076,636	\$4,107,350	\$8,137,253	\$10,565,750	\$5,947,730
CACC	2,097	7,156	\$14,878,708	\$14,438,814	\$15,063,926	\$6,816,713	\$17,910,217	\$23,255,375	\$8,263,692
COTO	725	2,164	\$4,763,122	\$4,983,213	\$5,207,323	\$2,356,413	\$5,416,492	\$7,033,000	\$3,418,633
DMESC	398	1,242	\$2,605,609	\$2,488,245	\$2,860,239	\$1,294,313	\$3,107,475	\$4,034,875	\$1,706,267
ESCC	139	445	\$1,629,066	\$910,965	\$999,019	\$452,075	\$1,112,584	\$1,444,625	\$996,654
JATCC	609	1,299	\$4,735,920	\$4,696,136	\$4,373,131	\$1,978,925	\$3,250,146	\$4,220,125	\$2,685,194
METRO	1,560	3,203	\$15,671,722	\$13,106,350	\$11,201,436	\$5,068,863	\$8,015,858	\$10,408,125	\$8,697,217
MONTICELLO OEC	623	1,890	\$4,354,397	\$4,241,271	\$4,473,321	\$2,024,263	\$4,730,670	\$6,142,500	\$2,820,387
NCCC	248	845	\$2,159,796	\$1,876,203	\$1,780,063	\$805,513	\$2,113,784	\$2,744,625	\$1,358,284
NEACTC	1,429	3,374	\$10,159,793	\$9,941,187	\$10,262,387	\$4,643,925	\$8,443,871	\$10,963,875	\$6,158,427
NPTC	934	2,804	\$5,496,171	\$7,076,183	\$6,711,238	\$3,036,963	\$7,018,412	\$9,113,000	\$4,517,946
NTC	447	908	\$3,367,459	\$3,375,116	\$3,210,363	\$1,452,750	\$2,271,473	\$2,949,375	\$2,981,641
NTI	686	1,570	\$6,877,575	\$5,397,757	\$4,928,301	\$2,230,150	\$3,928,459	\$5,100,875	\$4,494,814
PCCUA CTC	760	4,449	\$6,742,649	\$5,645,574	\$5,458,334	\$2,470,000	\$11,135,847	\$14,459,250	\$5,526,018
RVTC	494	2,034	\$3,433,487	\$3,392,724	\$3,549,713	\$1,606,313	\$5,091,102	\$6,610,500	\$2,185,209
SALINE CO CC	781	1,562	\$5,583,699	\$5,382,793	\$5,607,361	\$2,537,438	\$3,908,435	\$5,074,875	\$3,742,312
SAU TECH	1,022	2,594	\$7,192,780	\$7,047,848	\$7,340,383	\$3,321,663	\$6,492,782	\$8,430,500	\$4,873,989
SEACBEC	1,106	4,956	\$8,286,946	\$7,690,874	\$7,945,109	\$3,595,313	\$12,403,617	\$16,105,375	\$4,180,978
SOUTHARK	458	916	\$3,495,257	\$3,084,268	\$3,287,569	\$1,487,688	\$2,291,497	\$2,975,375	\$2,752,034
TEXARKANA CTC	1,253	3,767	\$9,435,124	\$8,783,885	\$8,998,711	\$4,072,088	\$9,428,801	\$12,242,750	\$5,417,737
WATC	1,430	3,009	\$10,815,226	\$10,640,859	\$10,268,133	\$4,646,525	\$7,531,527	\$9,779,250	\$7,044,987
TOTAL	20,513	58,868	\$156,308,378	\$147,327,630	\$147,327,630	\$66,668,550	\$147,346,604	\$191,321,000	\$101,145,327

Notes: Full names for career centers can be found in the appendix Table A.1. Abbreviations are used in this table to increase the volume of data on a single page.

Over the course of this study, given the current funding model and practices being used, of the 24 centers examined 5 have a surplus of funds from the VCAF above their total expenditures and 19 have negative balances. If the state were to fund based on the state average funding of \$7,182 per FTE which would keep funding at the current level of ~\$20.1 million per year, 10 centers would have a surplus of funds and 14 would have a negative balance. If the state were to fund at only \$3,250 per FTE, all 24 centers would have a negative balance and would reduce the amount of funding provided by ACE to secondary centers from \$147.3 million to \$66.7 million, making funding drop from approximately \$20.1 million per year to \$9.5 million per year.

If one were to base funding on the number of students enrolled, rather than the FTEs generated when funding using the state average funding per enrollment of \$2,503, 10 centers would have a surplus of funds while 14 would have a negative balance and would require no change in the funding amount. However, if funding were based on \$3,250 per enrollment 15 centers would have a surplus of funds while 9 would still be in the negative, and it would require an increase in funding of \$6.3 million per year above the current \$20.1 million to a total of \$26.4 million a year from the General Assembly.

However, if only expenditures allowable by policy that are directly linked to a program of study were funded by ACE, all 24 of the centers would have a negative balance when examining their expenditures. This is due to the fact that over \$46.2 million of the funds provided from the VCAF to secondary area career centers were spent on non-program of study related costs. If these non-program of study specific expenditures were excluded, it would result in either a surplus of \$6.6 million per year in VCAF funds, or allow the General Assembly to reduce its appropriation for the VCAF from \$20.1 million per year to \$14.5 million per year.

Of course, these are not the only changes in funding options that should be considered. There are multiple techniques that could take into consideration an economy of scale model that would be based on the number of students being served compared to the cost of the overall program. This would allow smaller centers to offer the more advanced, more costly programs. Or instead of basing it on the number of students in a more costly program, provide a base level of funding that is needed to establish a program and then provide additional funding on a per student or per FTE basis similar to the current model.

A possibly more equitable method of funding to help encourage centers or satellite campuses that are based on a specific high school campus to bring students from the districts they are serving to the center would be to provide a set level of funding for those students that are native students to that district, and higher level of funding to be given for those students that they recruit from the schools they are supposed to be servicing. This is because a center has less costs to incur from a student on their own campus than ones they have to deal with transportation from their home districts to the center, as well as other costs. To get in depth into these funding options would require more data and is beyond the current scope of this study, but would most likely produce fruitful results.

Synthesis of What's Being Done in Other States:

Finally, this study reports on state survey data from state-level CTE directors. Though this survey data is coarse, it does reveal important dimensions of how secondary area career centers are funded, as well as how changes in funding might be realized in Arkansas in the future. Of the 50 state CTE directors that were contacted 23 responded. Among the 23 respondents are 7 states in the southeast region also occupied by Arkansas. In addition to being regionally proximate, these seven states are also similar in economic structure and policy (on other dimensions of public policy). The survey itself is included in an appendix to this report.

Survey responses clearly indicated that spending on CTE in the states that responded comes primarily from the following sources, in order of relative volume: K-12 general funds, federal Perkins dollars, and state funds specific for CTE. In addition, allocations of funds to secondary area career centers are based on a variety of factors. However, in the sample of respondents there was no evidence that funding was tied to any student-level accountability outcomes, including employment, enrollment in higher education, or other forms of workforce training post high school.

Across the 21 respondents who provided responses about funding, most responses were similar. Most respondents indicated that funding is directly proportional to student enrollment levels, and only four indicated that this was not the case (HI, ID, IN, and ND). Similarly, only 10 of the 21 respondents indicated having to be fiscally accountable to a centralized state agency (like a Department of Education or Department of Career Education), whereas the other six did

not indicate such an accountability structure. Importantly, there is substantial overlap between states with limited centralized accountability and a lack of relationship between funding and enrollment. Governance and policy autonomy also appear linked to funding structures, with all but 6 states indicating that changes in governance practices require changes in state legislation.

In the few instances of states that reported having secondary area career centers, respondents indicated that support from the sending school of a student is an important factor in determining whether students enroll in a secondary area career center. In addition, Colorado serves as an interesting case in this data. In Colorado, funding is based on a reimbursement model during the fiscal year in which a student is enrolled in a center. This structure contrasts with Arkansas where a sending school is reimbursed one year based on the prior year's volume of participation in a secondary center. This difference in reimbursement is notable in part because secondary area career centers receive higher per pupil allocations, meaning that sending districts are losing a larger share of money than is typically spent in their own setting, with the exception of students of secondary centers that are located on high school campuses. Also notable in Colorado is that an economy of scale approach is used. Specifically, smaller programs (fewer FTE) receive higher funding per FTE to account for differences in fixed costs to offering programs as well as to ensure safety and meet academic and industry standards.

Conclusion and Recommendations:

Overall, the analysis conducted for this report suggests several conclusions and recommendations. First, despite producing outcomes for students that are comparable to what has been found for students in CTE programs in traditional high schools, funding to secondary area career centers appears disproportionate to their relative share of CTE FTEs generated, enrollees, concentrators, and completers. While centers require, in some instances at least, greater overhead costs to maintain, the relative share of funding per program of study and center is well in excess of what is provided, in aggregate, to traditional high schools that offer similar if not the same exact programs.

Second, it is clear that program availability at centers, or relative volume of concentrators in those centers, are not completely aligned with larger policy aims regarding high growth industry and college enrollment. While this report does not compare enrollment patterns to labor market statistics in depth, the relative allocation of students in programs is not entirely in line with the stated policy goals of the Education, Career Education, and Workforce Services departments in Arkansas.

Third, given the inconsistency of the data quality, as well as how and what data was reported by centers, a more in-depth analysis of expenditures should be considered in the future. This recommendation is due to the fact that some centers report internships and tuition with their respective programs of study while others reported them as their own category of expenditures. Additionally, it was found that some secondary centers were paying instructor salaries for non-secondary area career center related activities. These discrepancies suggest that more analysis, done prospectively, could be informative with respect to funding centers.

Fourth, an accountability system that is easily understood and used is necessary to ensure all students are being trained in a manner that meets industry and academic standards for career and/or college readiness. Such an accountability system would follow the already established requirements of the Perkins Act and WIOA so as to enable continuity to the accountability surrounding workforce education and development. It would include student academic outcomes such as the programs of study they completed, high school graduation, college enrollment, or other forms of postsecondary training. It would also need to include a variety of workforce outcomes such as employment, earnings, maintaining employment, or entered military service or apprenticeship programs.

Fifth, a reexamination and possible redesign of how CTE is delivered in the state, not only through secondary area career centers, but traditional high schools is possibly needed as well. There are multiple things that can happen that would streamline the current system to maximize use of current resources and increase outcomes for all involved. Things to consider in this process include (but may not be limited to):

1. Reduce the number of programs of study offered by getting rid of duplicative programs that at the core are the same but only different in name
2. Reduce or increase the number of programs of study that are offered in an area based on industry input and through in-depth sound analysis of the economic environment in the immediate and surrounding area.

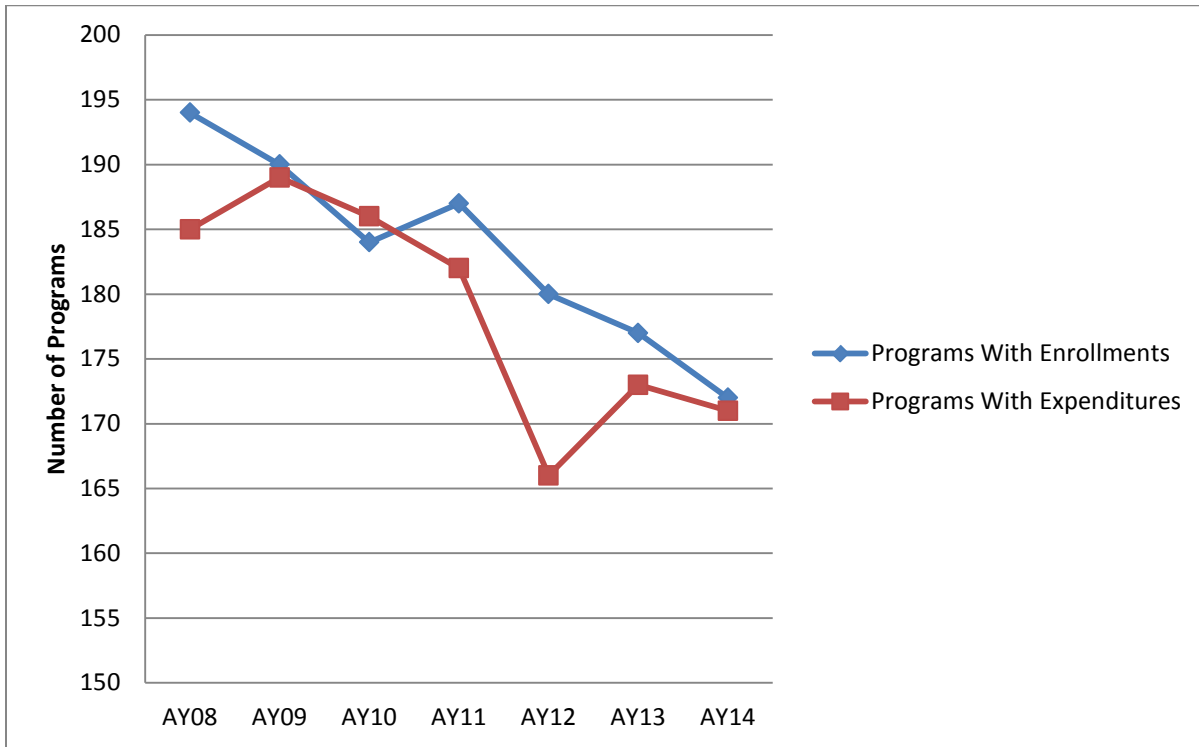
3. Consider a model that would provide more economic and industry aligned programs of study on local high school campuses that would be a joint effort with the local postsecondary institutions, particularly for the more costly programs, so that students can take the introductory level courses that require less expensive equipment costs on their home campus and then in their junior or senior years of high school enroll at the local community college and complete the last year or two of both CTE and academic credit on a community college campus. This would ensure that students left high school with one, if not multiple industry recognized and academically recognized credentials.

Sixth, establish a curriculum development and revision process that requires secondary instructors, postsecondary instructors, adult education instructors, and industry trainers to come together to develop a standardized statewide aligned curriculum that spans K-12, adult education, postsecondary, and industry training standards that ensures articulation of credit to any community college in the state that provides their program of study. There by reducing the cost of postsecondary training on the student and expedites the creation of credentials and workers needed for the workforce development and economic advancement of the state.

Finally, there are a number of policies and procedures that should be updated to provide clearer direction on center operation and responsibilities, accounting processes, and data collection. For instance, it will be important to establish and enforce standard operating procedures for program accounting, to ensure funds are being handled appropriately. In addition, it will be important to establish and enforce related procedures for program approval and funding. Such procedures can reinforce a clear understanding between the division of the agency that approves programs of study to be offered in a center, and the division that is responsible for providing the funding for the new programs. An analogous process should also be updated to account for programs that are discontinued.

Appendix A: Figures

Figure A.1. Total number of Programs at Secondary area career centers by Academic Year



Appendix B: Tables

Table A.1. Full names and abbreviations for secondary area career centers in Arkansas.

Center	Abbreviation
Arkansas Northeastern College Technical Center	ANC
ASU Mid-South Technical Center	ASU Mid-South
ASU Searcy Regional Career Center	ASU Searcy
ATU Career Center	ATCC
Conway Area Career Center	CACC
DeQueen-Mena Cooperative Technical Education Center	DMESC
EastArk Secondary Career Center	ESCC
Jefferson Area Technical Career Center	JATCC
Metropolitan Career and Technical Center	Metro
Monticello Occupational Education Center	Monticello OEC
National Park Technology Center	NPTC
North Central Career Center	NCCC
NorthArk Technical Center	NTC
Northeast Arkansas Career & Technical Center	NEACTC
Northwest Technical Institute Secondary Career Center	NTI
Ouachita Career Center	COTO
Phillips Community College Career and Technical Center	PCCUA CTC
River Valley Technical Center	RVTC
Saline County Career Center	Saline Co CC
SAU Tech Career Academy	SAU Tech
South Arkansas Community College Secondary Technical Center	SouthArk
Southeast Arkansas Community Based Education Center	SEACBEC
Texarkana Arkansas Career & Technological Center	Texarkana CTC
Western Arkansas Technical Center	WATC

Table A.2. Programs of study across time with average full-time equivalents and total and average expenditures across the study period.

POS	# of Centers with POS AY08-AY14	FTEs Generated AY08-AY14		POS Expenditures AY08-AY14	
		Total	Average/Yr	Total	Average/Yr
ADVANCED MANUFACTURING	5	194.4	27.8	\$1,961,046	\$280,149
ADVERTISING DESIGN	4	455.5	65.1	\$1,825,197	\$260,742
AGRICULTURAL BUSINESS	1	27.3	4.5	\$366,339	\$52,334
AUDIO, VIDEO, TECH & FILM	6	392.2	56.0	\$1,985,182	\$283,597
AUTO COLLISION REPAIR	11	1116.3	159.5	\$5,610,050	\$801,436
AUTO SERVICE TECHNOLOGY	17	1720.7	245.8	\$8,717,337	\$1,245,334
AVIATION TECHNOLOGY	3	77.1	11.0	\$624,809	\$89,258
BANKING	2	92.9	13.3	\$561,240	\$80,177
BUSINESS	3	215.2	30.7	\$1,076,183	\$153,740
CASHIER/CHECKER	1	49.2	7.0	\$377,081	\$53,869
COMPUTER ENGINEERING	15	1005.1	143.6	\$5,606,063	\$800,866
CONSTRUCTION TECHNOLOGY	12	649.3	92.8	\$3,808,750	\$544,107
COSMETOLOGY	14	2166.2	309.5	\$8,980,373	\$1,282,910
CRIMINAL JUSTICE	13	1298.0	185.4	\$5,208,616	\$744,088
CULINARY ARTS	4	386.3	55.2	\$1,551,020	\$221,574
DATA DESIGN	1	3.8	1.3	\$46,467	\$11,617
DIESEL TECHNOLOGY	2	116.8	16.7	\$812,822	\$116,117
DIGITAL COMMUNICATIONS	2	157.1	22.4	\$347,679	\$49,668
DRAFTING & DESIGN	11	662.4	94.6	\$3,689,863	\$527,123
EAST	1	108.3	15.5	\$380,928	\$54,418
EDUCATION & TRAINING	3	202.7	29.0	\$989,934	\$141,419
ELECTRONICS	1	56.8	8.1	\$532,825	\$76,118
FOOD PRODUCTION, MAN. & SERV.	3	107.9	15.4	\$655,130	\$93,590
FURNITURE MANUFACTURING	1	38.0	5.4	\$402,521	\$67,087
GRAPHIC COMMUNICATIONS	3	267.9	38.3	\$4,053,602	\$579,086
HOSPITALITY	2	104.7	15.0	\$655,913	\$93,702
HVAC	2	43.0	6.1	\$272,583	\$38,940
INDUSTRIAL EQUIPMENT MAINT	5	196.2	28.0	\$1,233,270	\$176,181
INTERNSHIP	5	420.8	60.1	\$1,655,456	\$236,494
MACHINE TOOL TECHNOLOGY	6	342.9	49.0	\$1,820,688	\$260,098
MAJOR APPLIANCE REPAIR	1	38.9	13.0	\$202,289	\$67,430
MANAGEMENT	1	20.5	5.1	\$169,707	\$56,569
MEDICAL PROFESSIONS	23	5355.1	765.0	\$20,514,235	\$2,930,605
PETROLEUM TECHNOLOGY	2	16.7	2.4	\$239,303	\$34,186
PLANT SYSTEMS-HORTICULTURE	4	201.6	28.8	\$1,170,156	\$167,165
POWER EQUIPMENT TECHNOLOGY	4	226.1	32.3	\$1,325,600	\$189,371
PRE-ENGINEERING	6	75.9	10.8	\$536,526	\$76,647
RENEWABLE ENERGY	3	31.9	4.6	\$725,156	\$103,594
WAREHOUSE & DISTRIBUTION	1	0.0	0.0	\$242,957	\$121,479
WEB DESIGN	2	79.4	11.3	\$237,081	\$33,869
WELDING	18	1793.3	256.2	\$10,028,233	\$1,432,605
Total		20513.4	2941.5	\$101,200,210	\$14,629,362

Table A.3. Programs of study across time with average full-time equivalents and expenditure range across the study period.

POS	# of Centers with POS AY08-AY14	FTEs Generated AY08-AY14		Average Expenditures Per FTE AY08-AY14		
		Total	Average/Yr	Overall	Low	High
ADVANCED MANUFACTURING	5	194.4	27.8	\$10,088	\$6,607	\$19,538
ADVERTISING DESIGN	4	455.5	65.1	\$4,007	\$3,312	\$4,701
AGRICULTURAL BUSINESS	1	27.3	4.5	\$13,444		
AUDIO, VIDEO, TECH & FILM	6	392.2	56.0	\$5,062	\$3,278	\$9,320
AUTO COLLISION REPAIR	11	1116.3	159.5	\$5,026	\$3,246	\$10,519
AUTO SERVICE TECHNOLOGY	17	1720.7	245.8	\$5,066	\$475	\$9,905
AVIATION TECHNOLOGY	3	77.1	11.0	\$8,104	\$632	\$29,054
BANKING	2	92.9	13.3	\$6,045	\$5,743	\$6,119
BUSINESS	3	215.2	30.7	\$5,002	\$1,981	\$7,416
CASHIER/CHECKER	1	49.2	7.0	\$7,664		
COMPUTER ENGINEERING	15	1005.1	143.6	\$5,578	\$2,053	\$13,007
CONSTRUCTION TECHNOLOGY	12	649.3	92.8	\$5,866	\$3,384	\$31,942
COSMETOLOGY	14	2166.2	309.5	\$4,146	\$2,419	\$9,251
CRIMINAL JUSTICE	13	1298.0	185.4	\$4,013	\$2,427	\$7,000
CULINARY ARTS	4	386.3	55.2	\$4,015	\$2,847	\$6,610
DATA DESIGN	1	3.8	1.3	\$12,228		
DIESEL TECHNOLOGY	2	116.8	16.7	\$6,959	\$5,491	\$6,959
DIGITAL COMMUNICATIONS	2	157.1	22.4	\$2,214	\$3,537	\$1,685
DRAFTING & DESIGN	11	662.4	94.6	\$5,570	\$2,481	\$9,392
EAST	1	108.3	15.5	\$3,519		
EDUCATION & TRAINING	3	202.7	29.0	\$4,884	\$3,336	\$35,565
ELECTRONICS	1	56.8	8.1	\$9,389		
FOOD PRODUCTION, MAN. & SERV.	3	107.9	15.4	\$6,072	\$2,884	\$9,162
FURNITURE MANUFACTURING	1	38.0	5.4	\$10,593		
GRAPHIC COMMUNICATIONS	3	267.9	38.3	\$15,131	\$9,176	\$35,532
HOSPITALITY	2	104.7	15.0	\$6,268	\$3,989	\$12,662
HVAC	2	43.0	6.1	\$6,347	\$4,457	\$6,595
INDUSTRIAL EQUIPMENT MAINT	5	196.2	28.0	\$6,287	\$4,778	\$8,261
INTERNSHIP	5	420.8	60.1	\$3,935	\$2,230	\$7,085
MACHINE TOOL TECHNOLOGY	6	342.9	49.0	\$5,310	\$3,875	\$8,212
MAJOR APPLIANCE REPAIR	1	38.9	13.0	\$5,200		
MANAGEMENT	1	20.5	5.1	\$8,299		
MEDICAL PROFESSIONS	23	5355.1	765.0	\$3,831	\$2,290	\$7,426
PETROLEUM TECHNOLOGY	2	16.7	2.4	\$14,373	\$13,184	\$16,455
PLANT SYSTEMS-HORTICULTURE	4	201.6	28.8	\$5,804	\$371	\$11,839
POWER EQUIPMENT TECHNOLOGY	4	226.1	32.3	\$5,864	\$4,413	\$11,535
PRE-ENGINEERING	6	75.9	10.8	\$7,069	\$0	\$43,016
RENEWABLE ENERGY	3	31.9	4.6	\$22,732	\$16,388	\$75,556
WAREHOUSE & DISTRIBUTION	1	0.0	0.0			
WEB DESIGN	2	79.4	11.3	\$2,988	\$2,652	\$5,299
WELDING	18	1793.3	256.2	\$5,592	\$4,428	\$11,172
Total		20513.4	2941.5	\$4,933		

Table A.4. Aggregate average expenditures on programs of study and non-program of study line items by secondary area career center.

PERCENT OF EXPENDITURES AY08-AY14 BY TYPE						
CENTER	PROGRAM OF STUDY			NON-PROGRAM OF STUDY		
	% OF TOTAL EXP	YEAR MIN%	YEAR MAX%	% OF TOTAL EXP	YEAR MIN%	YEAR MAX%
ANC	84.8%	63%	100%	15.2%	6%	37%
ASU SEARCY	78.8%	77%	80%	21.2%	20%	23%
ATU	61.2%	51%	67%	38.8%	33%	49%
CONWAY CC	55.5%	39%	74%	44.5%	26%	61%
DEQUEEN/MENA	65.5%	0%	79%	34.5%	0%	48%
EAST ARK	61.2%	44%	72%	38.8%	28%	56%
JATC	56.7%	50%	60%	43.3%	40%	50%
METRO	55.5%	51%	66%	44.5%	34%	49%
MIDSOUTH	66.2%	42%	89%	33.8%	11%	58%
MONTICELLO OEC	64.8%	57%	69%	35.2%	31%	43%
NATIONAL PARK	82.2%	0%	89%	17.8%	0%	30%
NEA	60.6%	57%	64%	39.4%	36%	43%
NORTH CENTRAL	62.9%	60%	70%	37.1%	30%	40%
NORTHARK	88.5%	82%	100%	11.5%	0%	18%
NTI	65.4%	44%	83%	34.6%	17%	56%
OUACHITA	71.8%	62%	85%	28.2%	15%	38%
PCCUA	82.0%	58%	88%	18.0%	12%	42%
RIVERVALLEY	63.6%	60%	66%	36.4%	34%	40%
SALINE CCC	67.0%	57%	71%	33.0%	29%	43%
SAUTECH	67.8%	62%	74%	32.2%	26%	38%
SEACBEC	50.5%	45%	57%	49.5%	43%	55%
SOUTHARK	78.7%	69%	88%	21.3%	12%	31%
TEXARKANA	57.4%	49%	67%	42.6%	33%	51%
WATC	65.1%	62%	68%	34.9%	32%	38%