

UNDERSTANDING MISSISSIPPI'S CAREER TECHNICAL EDUCATION

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K-12 CTE OVERVIEW

AccelerateMS commissioned this analysis to fulfill the requirements set forth by House Bill 1388 (HB1388), which seeks to align Mississippi Public K-12 career technical education (CTE) clusters with postsecondary credential programs, employer demand, and occupations that provide family-sustaining wages. Enacted on March 23, 2022, HB1388 required a baseline analysis be conducted assessing the postsecondary and workforce outcomes of students enrolled in CTE clusters as part of their high school education.

This analysis has two primary objectives:

1

Provide information pertaining to secondary education outcomes of students enrolled in K-12 CTE in Academic Year (AY) 2017 through AY 2021

2

Provide information pertaining to postsecondary and employment outcomes of K-12 CTE graduates in AY 2017 through AY 2021.

DEFINITIONS

CTE Participants – The number of students enrolled in a Level 1 CTE course. **CTE Concentrators** – The number of students enrolled in a Level 2 CTE course.

*For this analysis, the MDE provided a list of courses categorized as Level 1 and Level 2.

Workforce CTE Cluster Alignment — The number employed in an industry that aligns with their K-12 CTE cluster. This alignment will be determined by examining the North American Industry Classification (NAICS) codes reported by each graduate's employer, then comparing these industry codes to the graduate's K-12 CTE cluster. A crosswalk of matching clusters and industries is provided in Appendix B. This crosswalk was provided by AccelerateMS in coordination with the Mississippi Department of Education and Mississippi State University's RCU.

DATA SOURCES

Data for this analysis were contributed to Mississippi's State Longitudinal Data System (SLDS) by the Mississippi Department of Education (MDE), the Mississippi Community College Board (MCCB), the Institutions of Higher Learning, and the Mississippi Department of Employment Security (MDES). These data record secondary education, postsecondary education, and employment outcomes of K-12 CTE participants from AY 2017 through AY 2021.

K-12 CTE ANALYSIS

The analysis focuses on the second annual study covering Academic Years 2017 to 2021.

Around 27,000 students enrolled in K-12 CTE programs each year. Although there was a slight dip (0.9%) in CTE participants, CTE concentrators remained relatively stable.

	AY2017	AY2021	Numeric Change	Percent Change
CTE Participants	26,781	26,527	-254	-0.9%
CTE Concentrators	9,838	9,816	22	-0.2%

On average, 8,200 K-12 CTE concentrators graduated annually, with a 5% increase over the study period. K-12 CTE concentrators had a 1% (83 total) dropout rate for AY 2021. Which showed a positive trend in program engagement. The dropout rate for AY 2021 for all seniors was 8.49%. This shows the impact CTE has on high school dropout reduction.

The following K-12 CTE clusters had the highest numbers of CTE Participants:

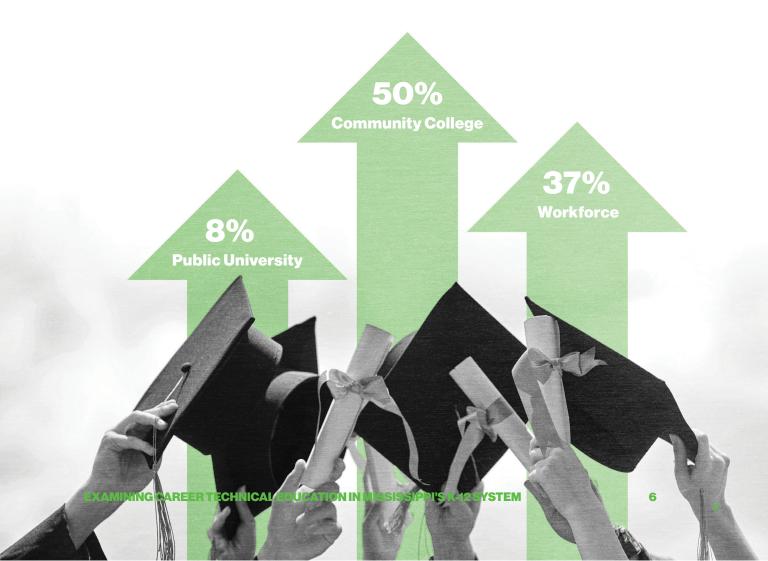


K-12 CTE ANALYSIS

On a positive trend more students graduated with CTE dual credit in AY 2021 than in AY 2017 with the biggest percentage coming from Ecosystem 5. Approximately 50% (4,106) of K-12 CTE concentrators enrolled in Mississippi community colleges, with 66% (2,709) staying on for a second academic year. Furthermore, 8% pursued higher education at public universities. However, only 8% (500 students) declared majors aligned with their K-12 CTE cluster. This shows that there is room for improvement in identifying pathways in high school to increase the percentage of students declaring aligned postsecondary clusters. Also identified in this analysis is the need to push more K-12 CTE concentrators to further their education in community college CTE or workforce programs.

About 37% (3,051) of K-12 CTE concentrators skipped postsecondary education, opting for direct entry into the workforce. About 66% (2,022) were employed within a year of graduation, with 24% (477) securing jobs aligned with their K-12 CTE cluster. The average earnings for these CTE concentrators that opted to go straight into the workforce is approximately \$13,032. This figure includes both part-time and full-time employment, which may slightly skew the average annual earnings (these students did not enroll in any college courses). These low alignment numbers highlight the need for enhanced wage reports that provide better detail on the nature of the work of a person.

For instance, IT expert working in some other sector currently reports as out of their field.



K-12 CTE ANALYSIS

In the year following graduation, CTE concentrators who went straight into the workforce about 26% (804) received public assistance or unemployment benefits. This included 23% (689) on the Supplemental Nutritional Aid Program (SNAP), 0.3% (<10) on Temporary Aid for Needy Families (TANF), and 6% (184) on unemployment insurance (UI) benefits.

In AY 2021-2022, across the state, a total of 12,071 K-12 CTE students participated in credential assessments within various courses. The statewide credential attainment rate was 46.9%. Noteworthy achievements include a perfect pass rate of 100% for NCCER - MCEF Pre-Post Exam Level 2 Welding, along with strong performances in Autodesk Certified User (59.3%). However, challenges were apparent, with some credentials falling below a 30% pass rate, such as Solid Works Edu - CSWA Academic (19.4%) and ServSafe Foundations of Restaurant Management (29.8%). Diverse fields, including Automotive Service Technology, Entrepreneurship, and Information Technology, exhibited pass rates ranging from 39.6% to 49.6%, showcasing the varied successes in career and technical education across the state.

COMMUNITY COLLEGE CTE OVERVIEW

House Bill 1388 charged AccelerateMS with aligning community college career technical education (CTE) programs to industry and occupations paying a family-sustaining wage.

One facet of HB1388 serves to conduct a baseline analysis of the workforce outcomes for students completing a CTE program through a Mississippi public community college, which is defined as the completion of either (1) an Associate of Applied Science degree, (2) the completion of a Career



Certificate, or (3) the completion of a Technical Certificate. This baseline analysis will enable AccelerateMS and state policymakers to understand better what happens to these graduates after exiting their community college CTE program.

In Mississippi post-secondary education, CTE programs are designed to provide students with the knowledge and skills necessary to enter the workforce in a specific industry or occupation. One unique aspect of Mississippi's CTE postsecondary programs is the multiple exit points available to students. All CTE curriculum is designed in a stackable credential format with multiple exit points. The stackable credentials will be designed into a 30-semester hour career certificate, 45-semester hour technical certificate, and 60-semester hour Associate of Applied Science Degree (AAS).

DEFINITIONS

Career Certificate - 30 hours minimum completed of coursework in a CTE degree, if applicable.

Technical Certificate – 45 hours minimum completed of coursework in a CTE degree, if applicable.

Associate of Applied Science (AAS) – 60 hours minimum completed of coursework in a CTE degree which would include the Technical Certificate Coursework plus 15 hours of academic coursework.

Average Annualized Earnings – The average (median) annualized earnings of graduates who are employed within one year of graduation. Quarterly earnings are multiplied by 4 to create an annualized earnings measurement, and the median value is reported. Results will be presented in total and by industry of employment. These will represent part time and full time employment.

COMMUNITY COLLEGE CTE OVERVIEW

The results of this analysis align with these two core objectives:

OBJECTIVE 1

Measure Postsecondary Outcomes of Community College CTE Students

The first objective of this analysis provides information on the number of community college CTE students in the state, the subject areas studied, and the number of students who subsequently enroll in a Mississippi 4-year public university.

OBJECTIVE 2

Measure Employment Outcomes of Community College CTE Students

The second objective of this analysis provides information on the employment outcomes of community college CTE students who graduated with an Associate of Applied Science degree, a Career Certificate, or a Technical Certificate. For community college CTE graduates entering the workforce after completing a CTE program, this analysis determines the extent to which students' subject area of study, as defined in this analysis, is aligned with the industry of employment after graduation. For unemployed graduates, this baseline analysis checks alternative outcomes, such as whether the graduate received public assistance or unemployment benefits.

DATA SOURCES

Data for this analysis were contributed to Mississippi's State Longitudinal Data System (SLDS) by the Mississippi Community College Board (MCCB), the Institutions of Higher Learning (IHL), and the Mississippi Department of Employment Security (MDES). These data record postsecondary and employment outcomes of community college CTE participants from Academic Year (AY) 2018 through AY 2022.

COMMUNITY COLLEGE CTE ANALYSIS

The analysis focuses on the second annual study covering Academic Years 2018 to 2022.

Each year, about 20,000 students joined technical education programs, but there was a 5% drop overall. This was mostly because Career/Technical Certificate programs fell by 27%, while Associate of Applied Science (AAS) degrees went up by 5%. From a comparison perspective, 9-12 grade enrollment fell by 5% (7,225 students) from AY 2018-2022 during due same period. This means that there was a declining population of high school seniors which lessened the pool of traditional students coming into college.

	AY2018	AY2022	Numeric Change	Percent Change
Total Community College Enrollment	95,425	89,248	-6,177	-7%
Total CTE Student Enrollment AAS CTE Degree CTE Certificate	20,414 13,648 6,766	19,315 14,377 4,938	-1,099 729 -1,828	- 5% + 5% - 27%

On average, 7,901 students graduated yearly, with 4,233 getting AAS degrees and 3,667 getting Career/Technical Certificates. But there was an 11% drop in overall graduates, with AAS and Certificate program graduates decreasing by 11% and 10%, respectively.

Out of about 7,400 graduates not enrolling in public universities, roughly 66% (4,900) found jobs within a year, with 35% working in aligned fields, earning \$32,422 in their first year. This number currently cannot account for students who may go to work or a university outside of the state.

About 457 graduates each year moved on to public universities, with 60% picking majors aligned to their community college degree.

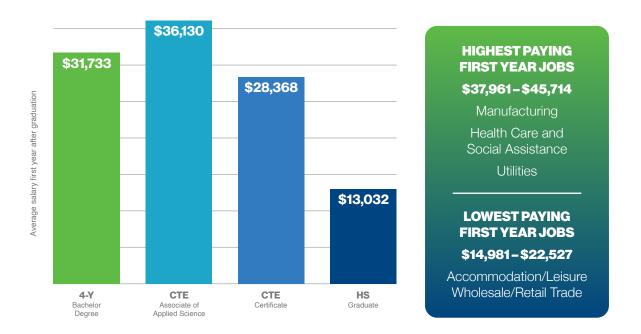
^{*} However, it is important to note existing wage record data does not account for individuals who work in their area of training but in an industry outside of their "sector." For instance, an individual who completes an IT program and works in healthcare or banking would be employed in an industry that does NOT align. Enhanced wage data is a critical opportunity for the state to strategically improve program alignment and reporting of outcomes. These are the career clusters used for alignment: community college CTE cluster.

COMMUNITY COLLEGE CTE ANALYSIS

On average, community college CTE graduates earn approximately \$32,422 in their first year of employment after graduation. A significant gap in earnings was observed between black (\$27,863) and white (\$35,000) CTE program graduates. This speaks to the opportunity gaps that are present in certain regions of the state.

When comparing types of completion possibilities at a community college, AAS enrollment skewed more toward white than black; certificate enrollment skewed more toward black than white. It is also noteworthy that graduates with an Associate of Applied Science degree (\$36,130) earned more than those with a Certificate (\$28,368) in their first year after graduation. All earnings saw around a \$3000-5000 increase in AY 2022 which raised the 5-year average. Additional analysis must be completed to determine how wage gaps are related to program offerings, program selection, career sector opportunities, and other possible factors.

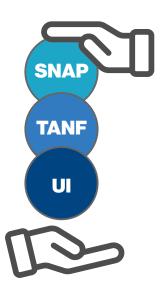
Funding needs to be used to address the gap identified within these analyses. The analysis also sheds light on the first-year salaries of graduates in various industries. Jobs in Utilities (\$45,714), Health Care and Social Assistance (\$39,643), and Manufacturing (\$37,961) were the highest paying. On the other hand, Accommodation/Leisure (\$14,981) and Wholesale/Retail Trade (\$22,527) had the lowest salaries. It is worth noting that these earnings include part-time and full-time employment.



Note: These earnings were all measured in the 2nd quarter after graduation with the exception of MS Median Income for an Individual. That earning was pulled from the source below and it includes all of the population in MS employed over the age of 16 with earnings during the same time period.

Source: American Community Survey 2018-2022 5-Year Estimates.

COMMUNITY COLLEGE CTE ANALYSIS



In the first year after graduation, about 13% (1,000 graduates) got public assistance or unemployment benefits. This included 8% (623) on Supplemental Nutritional Aid Program (SNAP), less than 1% (11) on Temporary Aid for Needy Families (TANF), and 6% (480) on unemployment insurance (UI) benefits. However, it is important to note that the data presented here only reflects the first year after graduation and does not provide a complete picture of individuals' long-term financial outcomes. While the COVID-19 pandemic significantly impacted data in AY 2020, the number of graduates receiving public assistance has rebounded to pre-pandemic levels.

These comprehensive analyses provided a detailed exploration of Mississippi's K-12 and community college landscape, delving into critical aspects such as enrollment trends, graduation rates, transitions to higher education, workforce integration, and public

assistance usage. It unveils a rich tapestry of student journeys post-completion of their K-12 CTE programs, offering a comprehensive understanding of successes and areas for improvement within the state's technical education framework. Moreover, the Community College analysis provides critical insights into the outcomes of students engaging in technical education within Mississippi's community colleges. These analyses paint a vivid picture of the tangible impact of technical education on students' lives.

The two analyses illuminate the multifaceted nature of students' educational and career trajectories, providing a nuanced perspective crucial for stakeholders to comprehend the complexities of Mississippi's K-12 and community college CTE programs. The analyses identified gaps and challenges, demanding attention from diverse stakeholders, including K-12 institutions, legislatures, community colleges, the state workforce board (SWIB), AccelerateMS, and local industries.

Serving as a strategic guide, these analyses empower decision-makers to fortify the state's CTE programs and foster meaningful pathways for students. Notably, the SWIB board and AccelerateMS recommendations are driven by data from such analyses and are pivotal in shaping policy frameworks which support and enhance the effectiveness of CTE initiatives in Mississippi.

*This analysis uses five years to present a comprehensive picture of students and student outcomes before, during, and, in some cases, after the academic interruptions caused by COVID-19. All data was heavily skewed from AY 2020 data because of the pandemic.

To view the entire analysis, please click on one of the following links.



