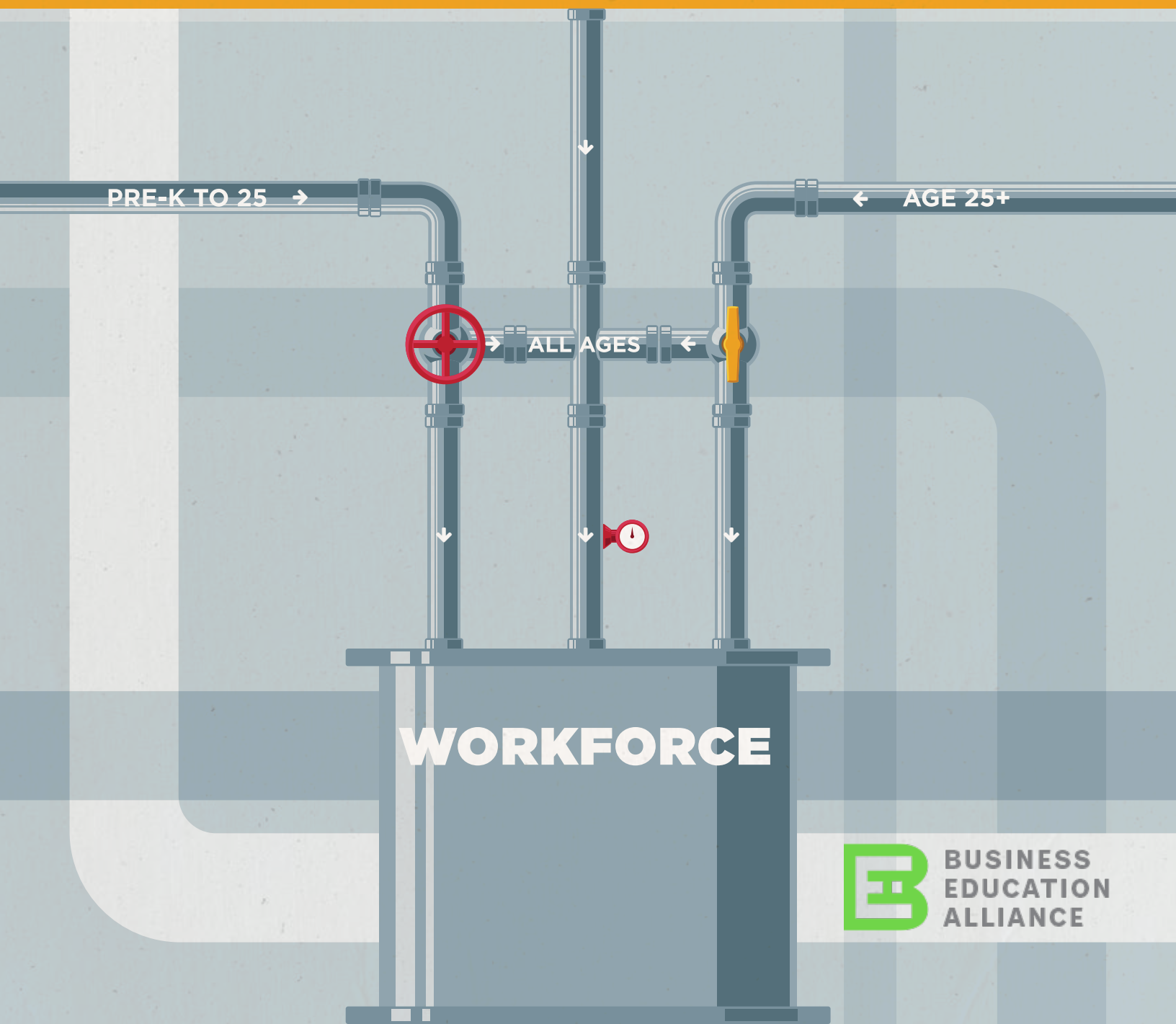


Education Matters:

**Measuring Alabama's Progress toward
500,000 Highly Skilled Workers**



**BUSINESS
EDUCATION
ALLIANCE**

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Education Matters:

Measuring Alabama's Progress toward 500,000 Highly Skilled Workers

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A+ drives improvements in public education for every Alabama student. We set and deliver high expectations by advocating for policies, practices, and investments that advance learning and by partnering with schools to build the capacity of teachers and leaders.



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The BEA and Workforce Development

The Business Education Alliance of Alabama was incorporated in 2013 as a 501(c)(3) nonprofit. The primary BEA mission is to bring business and education leaders together to discuss the challenges and opportunities that will allow Alabama to achieve its fullest potential both educationally and economically.

Each year, a BEA Advisory Council composed of business and education leaders meets to discuss the most pressing challenges at the time and then develop a theme for a research-based solution.

The 2019 report, *Education Matters*, is the first in a series of BEA reviews of Alabama's workforce development system. The report was developed by the BEA in partnership with the Public Affairs Research Council of Alabama and the A+ Education Partnership.

Alabama is in the midst of an extensive redesign of workforce development. This includes a goal of producing 500,000 new highly skilled workers between 2019 and 2025.

There are multiple concurrent evaluation plans in place for Alabama's workforce system. BEA reports and evaluations are not meant to contrast, compete, or conflict with other evaluations, some of which are mandated by the federal government.

This report, and its planned successors, attempts to accomplish three goals:

1. To provide a broad overview of Alabama's workforce system for business, education, and civic leaders.
2. To provide data that measures progress of the major components of the education pipeline.
3. To provide a detailed evaluation of one component of the education-workforce development pipeline.

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EXECUTIVE SUMMARY

Alabama is in the midst of one of the most significant workforce initiatives in the state's history. Reports have highlighted the need for 500,000 additional highly skilled workers by 2025 if Alabama is expected to compete for new industries and replace retiring workers. This equates to 60% of the state's working population earning a degree or credential beyond a high school diploma, up from 43% in 2017.

Ensuring every Alabama student graduates college and career ready is essential—but it is not enough. The state must actively work to expand the skills of those currently working to bring those on the sidelines into the workforce.

In addition to industry-led efforts to recruit and train new workers, the Governor's Office, state agencies, school systems, postsecondary institutions, and community-based organizations are moving in positive new directions to accomplish these goals.

This report provides an outline of the state's workforce development system, a review of critical data points in the education/workforce pipeline, and an exploration of one component of the pipeline, Career and Technical Education (CTE).

Key Findings

Reading and Math. According to results from the 2019 National Assessment of Educational Progress (NAEP), Alabama fourth and eighth graders scored

*Alabama fourth graders:
47th in reading, 50th in math
Alabama eighth graders:
48th in reading, 50th in math*

lower than students in any other state in math. In reading, Alabama fourth graders ranked 47th, and eighth graders ranked 48th among the 50 states (not including District of Columbia and Department of Defense schools). In contrast, Mississippi—with higher rates of poverty—has now achieved scores at the national average, moving far ahead of Alabama. While state

assessments show that 48% of Alabama's elementary and middle grades can read with needed proficiency, NAEP puts the number at 30%.

College and Career Readiness. The state's graduation rate increased from 72% in 2011 to 90% in 2018, and the percentage of seniors deemed college and

13,746 Alabama seniors were not college and career ready in 2018.

career ready (CCR) grew from 66% to 75%. Still, this means that 13,746 Alabama seniors failed to demonstrate college and career readiness in their senior year.

Career and Technical Education. Alabama issued 55,126 Career Technical Education (CTE) certificates in 2018. CTE is the fastest growing method for students to earn the CCR designation in the state.

However, not all certificates appear to rise to the level of rigor that demonstrates college and career readiness.

- Adult Beef Inspection certificates increased from 93 in 2016 to 7,221 in 2018.
- Combined Beef and Pork Inspection certificates increased from 2,686 to 8,955.
- Microsoft Office related certificates increased from 8,186 in 2016 to 14,781 in 2018.
- Guest Service Professional certificates increased from 76 in 2016 to 3,643 in 2018.

Questions for Policymakers

This report raises critical questions.

What does it mean to be authentically college ready or career ready?

Does the CCR designation accurately measure preparation for success in postsecondary education or in a career pathway?

In building the foundation for CCR, is there a comprehensive state plan to ensure all third graders can read on grade level?

Is there commitment to a plan to significantly increase the ability of Alabama's fourth and eighth graders to achieve proficiency at grade level in math and science?

How rapidly can the state build capacity to expand Pre-K to every student whose parents voluntarily want them to participate?

Is the current Career and Technical Education certification process driving up the CCR measure but shortchanging students and the state?

Does CTE certification mean students are prepared with expected competencies to be gainfully employed in a high-demand career pathway with stackable credentials?

How can dual enrollment programs be expanded and better coordinated between high schools and two-year and four-year colleges to support students seeking stackable credentials in a career pathway?

What is the plan to enhance the quality and viability of Career and Technical Education for all high school students?

How can the state continually evaluate the validity of the CCR measure?

—

These are challenging issues facing state and local policymakers. Efforts currently underway to develop a comprehensive longitudinal database will provide invaluable data and enable policymakers to address these critical workforce questions.

INTRODUCTION

Alabama is now closing its bicentennial celebration and beginning a new future.

Under Governor Kay Ivey's leadership, state government has launched a series of initiatives and public-private partnerships to address education and workforce development challenges. These goal-oriented and evidence-based projects are designed to improve opportunity for all Alabamians. Among these projects are the recent launching of the Alabama Committee on Credentialing and Career Pathways; Strong Start, Strong Finish; Born Ready; the Campaign for Grade-Level Reading, the Advisory Council for Excellence in STEM; and Success Plus.

The Alabama Committee on Credentialing and Career Pathways (ACCCP) is designed to strengthen awareness of workforce needs in the state and quality assurance of non-degree credentials. The committee will annually identify occupations that are high in demand regionally and statewide; and a compendium of highly valued, high-quality credentials characterized by substantial opportunities, specific evidence-based competencies, and opportunity to pursue stackable credentials as workers progress through a career pathway.¹

Strong Start, Strong Finish is an ambitious goal to strengthen and expand early childhood education, computer science in middle school and high school, and workforce development.

Born Ready is a new statewide campaign designed to raise parents' awareness about early childhood brain development and the importance of high-quality childcare and preschool.

¹ *ACCCP and TAC Handbook*. 2019. State of Alabama, Office of the Governor.

The Campaign for Grade-Level Reading is a statewide committee of teachers, researchers, and others creating plans to ensure all students read on grade level.

The Governor's Advisory Council for Excellence in STEM is a statewide committee of teachers, scientists, and industry leaders that created 22 recommendations to help students gain awareness of and prepare for careers in science, technology, engineering, and math.

Success Plus, developed by the Alabama Workforce Council, calls on the state to produce 500,000 additional highly skilled workers by 2025.

These and similar projects look toward the state's emerging workforce development challenge.

The challenge is well-documented.

- Alabama's population grew at 2.3% between 2010 and 2018, compared to a national average of 5.3%.²
- Alabama experienced a net increase through domestic migration³ of only 5,197. This earns Alabama last place among the 23 states with a positive net number.⁴
- Alabama's under 25 population is declining.⁵
- At 71.3%, Alabama's labor force participation rate among adults aged 25-64 is second lowest in the country.⁶ Only West Virginia is lower.

2 <http://parcalabama.org/at-199-alabama-still-growing-but-slowly/>

3 Net increase is defined as the number of people moving to Alabama from other states minus the number of people moving from Alabama to other states.

4 <http://parcalabama.org/at-199-alabama-still-growing-but-slowly/>

5 Annual Estimates of the Resident Population for Selected Age Groups by Sex for the United States, States, Counties, and Puerto Rico Commonwealth and Municipalities April 1, 2010 to July 1, 2018.

6 The Labor Force Participation Rate is the number of people employed plus the number of people employed and looking for work, divided by the population. The remaining percentage indicates the potential untapped workforce. However, the number may also include students, the elderly, and people with disabilities, and others who are not likely to enter the workforce.

- Alabama projects a worker shortage of 199,000 in 2026 and 273,000 in 2035.⁷

The projected workforce shortage will be felt over the next six years and will continue to worsen through at least the next decade.

Already, employers increasingly report challenges in finding, hiring, and retaining a qualified workforce. A market analysis conducted by consulting firm Deloitte found a gap between the supply and demand that will become worse over the next three years and will require extraordinary effort to overcome. Darin Buelow from Deloitte said expected growth will “exacerbate the supply and demand gap that the Huntsville area experiences now.”⁸

If the state cannot fulfill its promises to current and recently recruited industries, Alabama will face repercussions as current employers and those being courted seek states that can supply a workforce.

Success Plus

In 2018, the Alabama Workforce Council (AWC) Statewide Educational Attainment Committee published *Preparing Alabama’s Workforce of*

Alabama needs 500,000 additional highly qualified workers by 2025.

*Opportunity & Growth.*⁹ The report, more commonly known as *Success Plus* or the Success Plus Plan, estimates that Alabama needs 500,000

additional highly skilled workers by 2025 if the state is to successfully compete for new industries and fill existing positions when workers retire. The report asserts that by adding those 500,000 highly skilled workers, 60% of the state’s working population will have either a college degree or a high-

⁷ State of the Workforce Report XIII: Alabama. Available at <http://www2.labor.alabama.gov/WorkforceDev/Default.aspx#HWOL>

⁸ See Paul Gattis: *Huntsville area facing a labor market crunch, analysis says*. AL.Com, November 26, 2019.

⁹ Alabama Workforce Council 2019 Annual Report. See <https://alabamaworks.com/wp-content/uploads/alabama-workforce-council-2019-with-attainment-report-FINALMarch11.pdf>

value credential beyond a basic high school diploma. As of 2017, only 43% of the Alabama workforce had such credentials.

Governor Ivey has endorsed the goals articulated in the *Success Plus* report and has thrown the full weight of her office behind a multi-agency, public, and private effort to restructure the state's education and workforce system to meet the goal.

To add 500,000 highly skilled workers by 2025, Alabama needs to reach both working-age adults and also youth rising through the Pre-K, K-12, and postsecondary education systems.

To reach adults, the state's community colleges and other government agencies are working with

nonprofits and industries on creative and coordinated opportunities to educate and train those in the workforce and those who are

325,000 Alabamians do not have a high school diploma.

currently on the sidelines. The U.S. Census Bureau estimates that 325,000 Alabamians aged 25-64 have less than a high school education. Only 49% of them participate in the workforce. This percentage of under-educated adults not in the labor force places the state 47th, outpacing only West Virginia, Kentucky, and Mississippi, and compares to a national average of 61%.¹⁰

By increasing training and education, those in the workforce can advance their careers and increase earnings and prosperity. With updated skills and credentials, those currently out of the workforce can move off the sidelines and into the workforce.

For children, adolescents, and young adults who will become part of Alabama's workforce, the Pre-K, K-12, and postsecondary education systems are at the heart of this process. Alabama's high schools graduate about 50,000 students each year. If over the next five years, every graduate enters

¹⁰ U.S. Census Bureau, 2013-2017 American Community Survey 5-Year Estimates, Employment Status.

the workforce with a high-value credential or enters postsecondary education prepared to earn a degree, that rising generation could supply only half the high skilled workers needed to meet the 500,000 goal.

These challenges come as Alabama's workforce development system is in the midst of a massive reorganization, prompted by the passage of the federal Workforce Investment Opportunity Act (WIOA) in 2014.¹¹ WIOA requires each state to develop a plan to align state and local workforce delivery systems with federal funding streams to better serve both individuals seeking employment and employers seeking employees.

While the federal mandate provided an impetus for the reorganization, Alabama's urgent need to find qualified workers to fill available jobs makes a high-functioning and integrated workforce development system an imperative.

To be more precise, Alabama is attempting to create a *system* out of what has up to now been a disconnected constellation of education, training, and social service supports that prepare individuals for available jobs and support their ability to pursue employment and advance their skill levels. This new system will need to bridge the gap between education, training, and employment by matching qualified individuals with the business and industries in need of employees. By braiding streams of support, both for individuals and businesses, the state and partners in the private and nonprofit sector are seeking to create a more efficient, seamless, and continuous flow from learning to working and earning.

Within this outcome-oriented system, the state will set attainment goals and track progress toward meeting those goals, not only for the population at large but also for specific subgroups. The Governor's Office of Workforce and Education Transformation intends to track participation, credential and

¹¹ WIOA Fact Sheet, U.S. Dept. of Labor, <https://www.doleta.gov/WIOA/Docs/Final-Rules-An-Overview-Fact-Sheet.pdf>

degree attainment, and employment placement data by demographic subgroup. Pursuing attainment with equity across groups is a core value.

Put together as a true system, these programs and services could ensure Alabama can come closer to supplying the number of workers necessary to sustain current and future business needs.

WORKFORCE DEVELOPMENT IN ALABAMA

Alabama's economy is changing. No longer can a high school degree be the guarantor of a stable job, much less a career. The needs of employers are changing, and so too is the nature of work itself.

Alabama's public and private leaders recognize this and are responding.

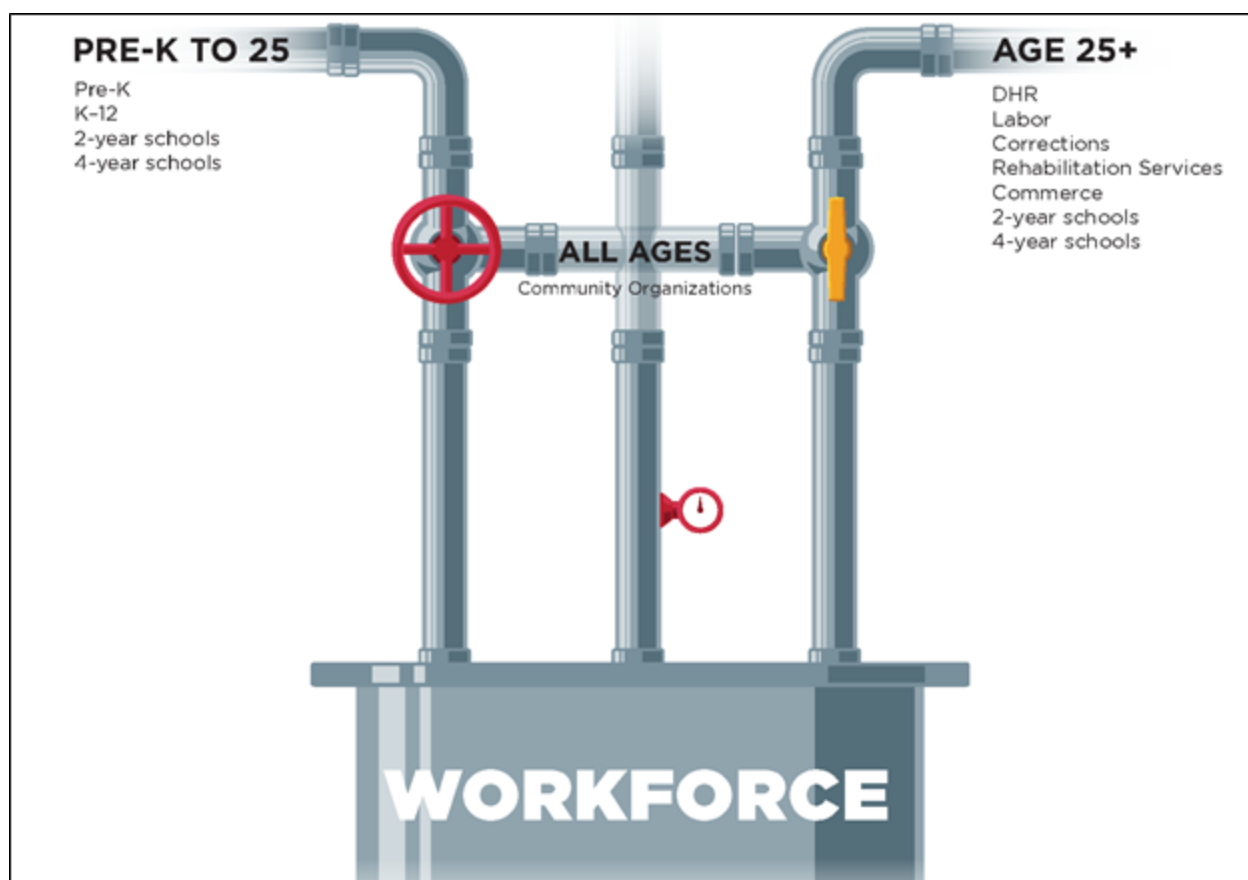
A vibrant 21st-century economy requires an educated workforce that is able to thrive in today's workplace and to adapt to the workplace of tomorrow.

From state and federal funds, Alabama spends more than \$150 million annually to support workforce development. This actually understates the total amount spent on workforce development, because it does not include certain programs like the federal Job Corps program or the massive amount of money available to support education through the Pell Grant program, through federally subsidized loans for education, and state and local funding for education.

There are multiple points of entry for the state's workforce development programs and services. Most of these services are free, although in some cases, referrals for training and education programs may involve investment from the participant. In many cases, these programs serve not only individuals but also answer the needs of employers. Some include subsidies that pay for training in the workplace. Participants can be enrolled in more than one program and receive complementary assistance. For example, a mother can be enrolled in Adult Basic Education and have access to WIOA funding for support services like transportation or childcare subsidies to help make participation possible.

Conceptually speaking, there are two pipelines in the workforce development system: 1) the education pipeline for students 25 and under enrolled in Pre K-12 and postsecondary education, and 2) the adult pipeline that serves as a conduit for adults wanting or needing additional education or skills training. See Figure 1.

Figure 1. The Two Pipelines of Workforce Development



While these pipelines have long existed, the state has established new linking organizations that connect job-providing business and industry to the education and training providers. That includes the statewide Alabama Workforce Council (AWC) and seven Regional Workforce Councils (RWCs), which advise the Governor and the Legislature on the state's workforce agenda and promote new legislation designed to improve the workforce system. The RWCs identify workforce issues in local communities and bring together employers and educators around strategies to address these needs and challenges.

The Adult Pipeline

The Adult Pipeline consists of the traditional workforce programs and services provided by the state and targeting adults who want to upgrade their skill or

education level, who are unemployed, underemployed, or have left the workforce.

This ecosystem consists of seven basic components, listed below and depicted in Figure 2.

1. Postsecondary Career Technical Education via the Alabama Community College System (ACCS)
2. Adult Basic Education (ABE), via ACCS
3. Vocational rehabilitation via the Alabama Department of Rehabilitation Services
4. Employment and career services via the Alabama Department of Labor
5. General skills training via various agencies with WIOA funding
6. Industry-specific skills training via Alabama Industrial Development Training
7. Nonprofit community-based partners that directly connect displaced workers to adult and postsecondary education, and support them in learning the “employability skills” valued in the workplace

Figure 2. Major Components of the Adult Workforce System

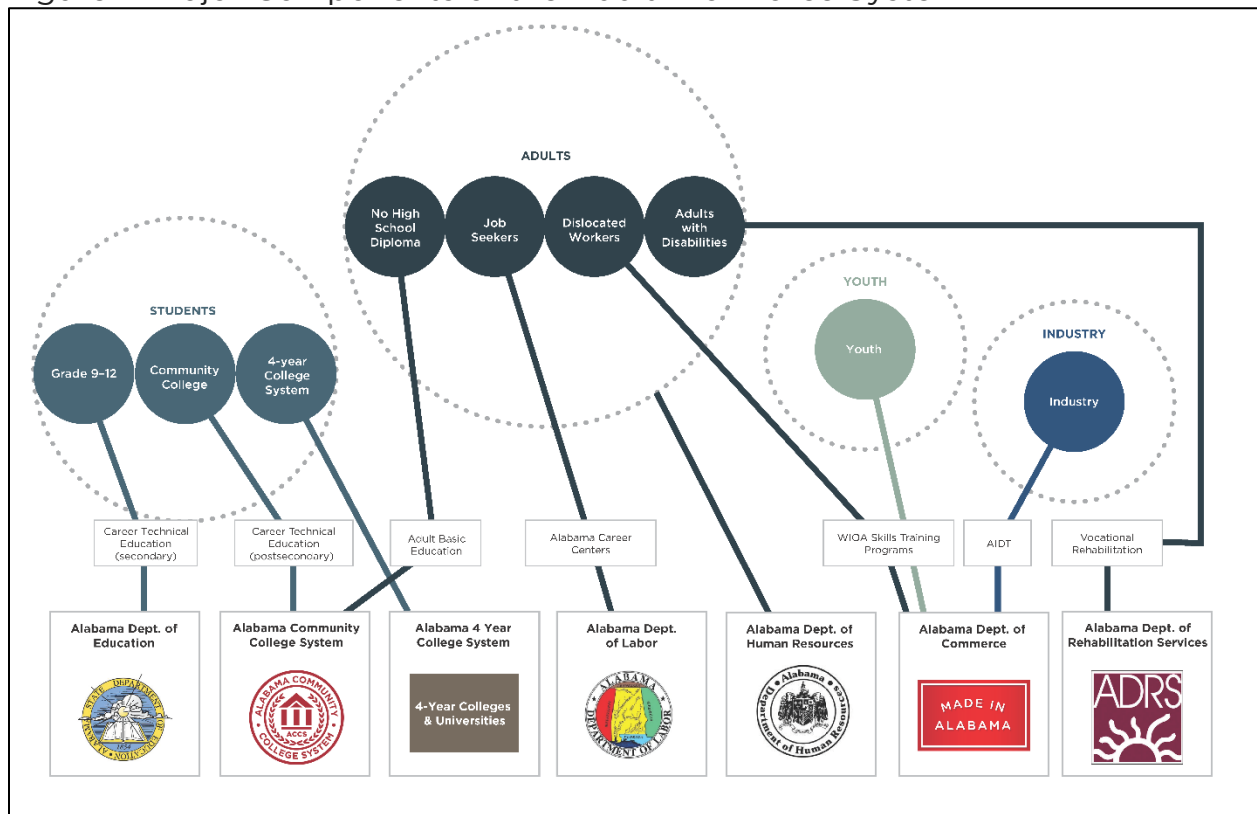
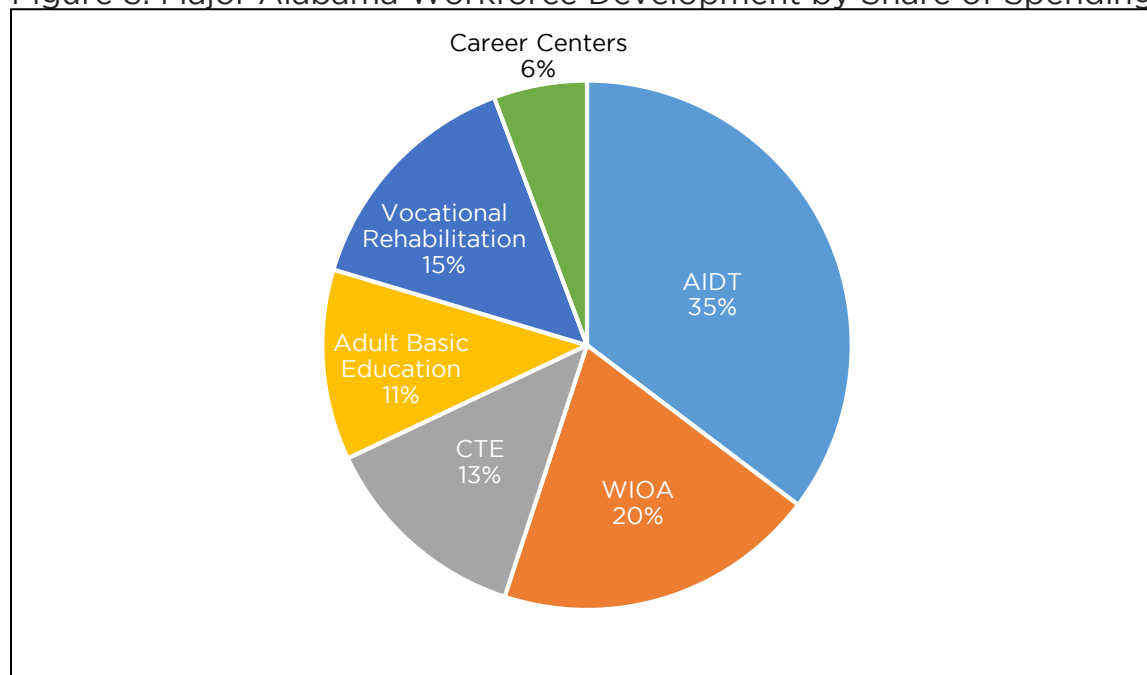


Figure 3 displays the relative size of these providers, excluding public education. The size of each wedge of the pie reflects the program's share of overall workforce development spending. CTE funding is broken into two pieces of the same color, reflected dollars spent in K-12 and the two-year college system. The size of each wedge reflects its budget size in fiscal year 2018.

Figure 3. Major Alabama Workforce Development by Share of Spending



Two-Year Colleges' Career-Technical Education



Federal, state, and local funds support Career and Technical Education in the state's community colleges. CTE is workforce-oriented education, including workforce experience or training in nursing, construction, computer skills, or any of the myriad other fields hungry for new workers.

The Alabama Community College System (ACCS) is the primary provider of CTE to adults as well as some students still in high school. The two-year college system provides a wide array of career and technical training leading to certificates, credentials, and, in some cases, associate degrees. These programs are separate from, but may overlap, two-year colleges' traditional academic curricula leading to an associate degree and possibly a transfer to a four-year institution.

Federal funds are provided via Perkins Basic State Grants. In 2018, the federal government increased Perkins Basic State Grants by \$75 million for a total of \$1.192 billion spent to support career technical education in the states.

Alabama's 2018 allocation of Perkins Fund dollars was \$20,188,010. Thirty percent of these funds are directed to ACCS for CTE. The balance is directed to the K-12 system. Alabama has increased both state funding and its emphasis on workforce-connected education and training in recent years.

According to federal reports, 50,589 Alabama students participated at the postsecondary level.¹² Some of these students enrolled in CTE immediately after high school. Others are so-called "non-traditional students" who come back to school later, perhaps through another workforce development program.

The Alabama Commission on Higher Education reports ACCS awarded 8,601 credentials and 9,916 two-year degrees in the 2017-2018 school year. At this time, it is not possible to determine how many unduplicated students received a certificate/degree nor how many were high school students in a dual enrollment program.

Adult Basic Education



In Alabama, 325,000 adults over age 25 do not have a high school diploma. They experience higher rates of unemployment and lower earnings. According to employment projections, occupations requiring a high school diploma or greater will comprise a growing share of the workforce.

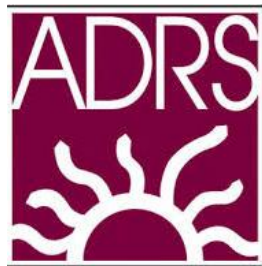
Any individual who has not earned a high school degree can take advantage of free Adult Basic Education (ABE) through the Alabama Community College System. ABE offers assessments of current academic levels and services to move recipients toward a high school diploma or GED. Instruction is available for everything from basic literacy to workplace skills training to college prep classes.¹³

¹² Ibid.

¹³ See a complete list of ABE services at <https://www.accs.cc/index.cfm/adult-education/adult-education-services/>.

In 2018–19, the two-year system allocated \$18 million to provide ABE. In 2017–2018, 28,525 adult students received services. Successful participation in Adult Education can then allow a transition into higher education or training, including CTE programs. Many nonprofits and community-based organizations provide similar services, particularly very basic education, such as basic literacy and math skills for individuals not ready for the level of instruction provided by the two-year college system. Except when provided under state contract, these services are considered outside the government-funded and assessed workforce development system.

Vocational Rehabilitation



For individuals with disabilities, the Alabama Department of Rehabilitation Services offers vocational rehabilitation services, a supplementary set of educational, training, and support services provided free to those facing barriers to employment from a disability, whether physical or mental. In 2017, the department spent \$22.9 million to serve 38,065 people. Services are provided directly by the department and by community-based organizations under contract to the department.

The disabled community, both male and female, continue to face some of the most challenging obstacles to employment.

Employment Services and Career Centers



Alabama Career Centers are funded by the U.S. Department of Labor and administered by the Alabama Department of Labor. Alabama Career Centers offer individuals counseling, support, and placement into work, training, and educational opportunities. There are about 50 career centers across the state, a number that has expanded with the reorganization of the workforce system. However, there are still some counties without a career center.

These offices support a system for matching individuals seeking a job with employers looking for employees and have been in place since 1933.¹⁴ In Alabama, the Alabama Career Center Network has both physical offices and an online database of open jobs. They also serve as the gateway to WIOA skills training programs discussed below and host representatives of Adult Education and Vocational Rehabilitation Services.

Skills Training



Alabama Career Centers also offer skills assessments and basic job skill training funded through WIOA. WIOA funds individual training accounts for individuals to pursue training and skills development. These funds can be used for tuition, books, and fees, and for transportation and childcare.

There are three main programs: the Adult Program, Out-of-School Youth Program, and Dislocated Workers Program.

When the funding for the Dislocated Worker Program exceeds needs, that money can be shifted to the Adult Program.

To qualify, individuals must demonstrate need of a new skill, be between the ages of 18 and 24, and have exited the conventional K-12 or community college system without a degree, be a dislocated worker, or someone who has lost a job because of a layoff or business closure.

These federal programs support opportunities for workers who want to improve their level of training, youth who need to develop employable skills, and dislocated workers in need of retraining. WIOA programs offer funds for job training, education, and supported work opportunities.

These programs are targeted at individuals with low incomes, the unemployed, and those with barriers to work. Counselors for the programs

¹⁴ https://www.doleta.gov/Programs/Wagner_Peyser.cfm

assess individuals for their eligibility and can create individual training accounts that will pay the cost of training and education.

In some instances, training account funds can be used to offset the expenses of participating in training.

Federal WIOA funds are reviewed and allocated by a state workforce investment board to regional workforce boards. Those boards approve the subsidized training partners in their regions that meet the demands of local employers. Subsidized training opportunities can also take place on the job, directly with employers in high-need, high-demand fields.

Work Supports



The federal WIOA legislation considers social support programs like the Supplemental Nutrition Assistance Program (SNAP), Temporary Assistance to Needy Families (TANF), and the Child Care and Development Fund (CCDF) as part of the workforce development system, providing support for eligible individuals that allow them to participate in education, training, and employment. The flow also goes the other way. All subsidized childcare recipients must be employed. Most TANF participants are required to participate in job searching, training, or work as a condition of receiving the benefit, and increasingly Alabama DHR is connecting SNAP recipients to job training and enhanced employment opportunities.

Industry-Specific Training



The above programs see the individual student as the customer and generally focus on transferable skills that can equip them for many jobs across a range of industries. Conversely, Alabama Industrial Development and Training (AIDT), funded by the Alabama Department of Commerce, works with and for specific industries and employers to identify, train, and place workers in a specific job in specific companies. AIDT is a state government-funded agency that acts as a training

provider for recruited industries. Thus, opportunities for training and skills development are offered that tie directly to jobs in demand.

AIDT's pre-employment programs are used to assess and strengthen employee skills through job-specific training. Candidates are observed in a simulated work environment. Leadership training is provided to help identified employees strengthen their leadership and communication skills. Interviewing skills are also developed, along with job placement services.

AIDT has a strong track record of success and is usually on the front line of incentives used by the Department of Commerce to recruit new businesses to Alabama or induce them to expand operations.

Community Partners

Community-based nonprofit agencies, such as the Sylacauga Alliance for Family Enhancement (SAFE), play an essential role in workforce development by helping displaced workers and those members of the population living in poverty become self-sustaining. Individuals who are involuntarily out of work may be suffering from the shock of losing their job after years of sustained employment. Others may be seeking to re-enter the workforce after years away raising a family or experimenting with retirement. More severely, many clients supported by community partners suffer from substance addiction, poor mental health, poor physical health, and lack of transportation. They may lack acceptable literacy skills to be successful. They may have criminal records. Some are victims of abuse and lack the trust in people and confidence in themselves to seek work or develop a career. Many have grown up in generational poverty or lack examples and role models.

Through case management, SAFE helps those in the most desperate circumstances through financial assistance, healthcare, housing, and transportation. Educational services are provided through partner agencies covering employability skills, financial literacy, specific job skills, and GED training. SAFE and similar agencies connect their clients to jobs, provide their clients with on-the-job guidance, and facilitate mediation services with

employers as needed. They serve as an active sounding board for clients and help them change their outlook and re-imagine their future.

The Pre-K to Postsecondary Pipeline

This pipeline is the traditional path through the public school system and can include Alabama First Class Pre-K, the K-12 system, and the two-year and four-year college systems.

The role of public education in workforce development is complex. Educators, business leaders, researchers, practitioners, policymakers, and administrators— all debate the proper role of education as it relates to workforce. Should an education system produce broadly educated students who can make informed decisions in a democracy or prepare a workforce developed to meet the needs of industry? These ideas are not necessarily mutually exclusive, but they have their roots in different places and can have profound implications for the delivery of education.

At the same time, the relative influence of educators in designing workforce education is in flux. Prior to 2014, educators comprised the dominant voice in

The public education system is the foundation of the state's workforce.

workforce development conversations. Currently, business and industry have a growing voice. At this critical juncture in the state's history, it is essential that these

voices envision and take action to achieve a compatible strategy.

In Alabama, school is compulsory at the age of six, but Pre-K and kindergarten are voluntary. While learning begins in the home and continues in preschools, houses of worship, and other community organizations, formal education begins with Alabama First Class Pre-K for an increasing number of children.

In the elementary grades, students learn to read and gain basic mathematical skills. The middle grades serve as a bridge between elementary school and

high school, where students now are reading to learn and are challenged by a more elevated curriculum requiring more critical thinking, recognizing and analyzing patterns, and getting exposure to algebra. Career exploration must occur at this level. By high school, students are doing advanced work, including in some cases, earning college credit, gaining workplace credentials, or completing apprenticeships.

In 2012, with Plan 2020, Alabama set a two-pronged goal: 90% of high school seniors graduate and all the graduates be college and career ready. The definition of college and career ready is explored later in this report.

The state met the 90% graduation goal in 2018. However, only 75% of those students were deemed college and career ready.

It is important to note that a high school degree is not defined as a high-value credential for the purposes of the Success Plus goal. In other words, a student with a high school diploma does not count toward the state's 500,000 goal. To be considered a highly skilled worker—to count toward the 500,000—a student must earn a high-value, industry-recognized credential in high school or a postsecondary institution, or earn a two-year or four-year postsecondary degree.

The youth education pipeline can be assessed through 11 key metrics:

- Pre-K enrollment
- Third-grade reading and math proficiency
- NAEP scores
- ACT scores
- WorkKeys scores
- FAFSA completion rate
- Graduation rate
- College and career readiness
- College going rate
- College remediation rate
- College graduation rate

With these metrics, the state can monitor performance along the pipeline. Continuous performance review is essential to identify leaky pipes and joints that need to be addressed.

INSPECTING THE PRE-K to POSTSECONDARY PIPELINE

Every year, the Public Affairs Research Council of Alabama (PARCA) collects detailed performance data from the Alabama State Department of Education. PARCA uses these data to develop interactive dashboards of critical education data, allowing a deeper level of analysis than otherwise is available to the public. The following charts are extracted from this analysis of data for all students. Interactive versions of this data, including sub-group analysis, are available at parcalabma.org and beaalabama.org.

First Class Pre-K

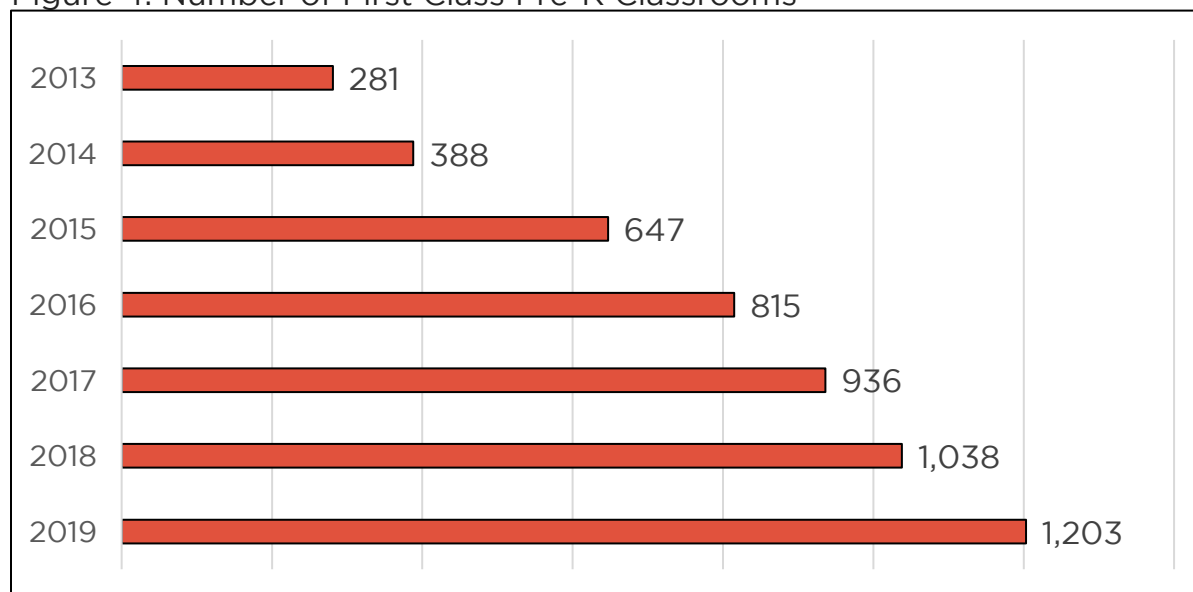
The metric measures:	Number of First Class Pre-K Classrooms, participating students, and percent of four-year-olds participating
Source of data:	Alabama Department of Childhood Education 2019-20 Data Snapshot
Relevance to the pipeline:	Students receiving First Class Pre-K are less likely to need special education, to be held back, or to have discipline problems. First Class Pre-K students outperform peers academically, producing an effect detectable throughout their academic careers, according to ongoing research.

Implication for the workforce: First Class Pre-K is rapidly increasing in the state, although the vast majority of children are still not participating. Enrollment is dependent on available space and parent/guardian motivation to enroll their children in the program.

The state's education system begins, for some, with Alabama First Class Pre-K, governed by the Alabama Department of Early Childhood Education.¹⁵ Expansion of Pre-K began in earnest in the 2005-06 school year, with a state appropriation of \$4.3 million (current dollars) funding 57 classrooms and 1,206 four-year-olds. By 2019-20, the state's Pre-K funding expanded to \$123 million (current dollars), funding 1,203 classrooms and 20,574 participating four-year-olds. This equates to an increase of 2,130% in funding and 1,605% in enrollment. No other state expenditure has seen such growth.

Figures 4, 5, and 6, respectively, show the number of estimated First Class Pre-K classrooms in Alabama, the number of children participating, and the percentage of all Alabama four-year-olds those participating children represent. Each funded classroom provides space for 18 children. There is a statewide waiting list of children.

Figure 4. Number of First Class Pre-K Classrooms



¹⁵ <https://children.alabama.gov/>

Figure 5. Number of Children Participating in First Class Pre-K

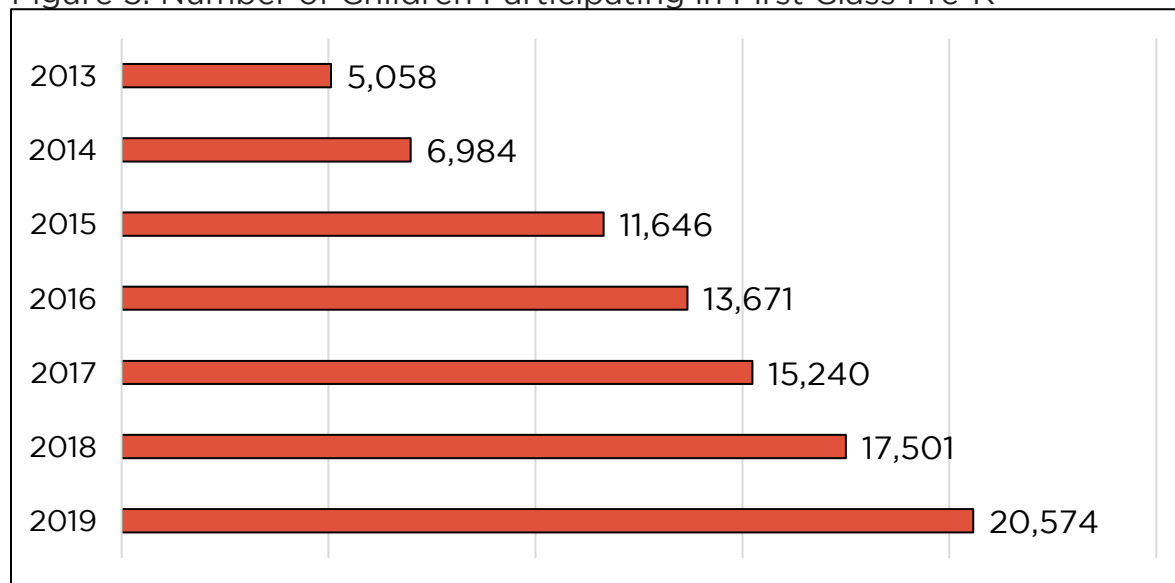
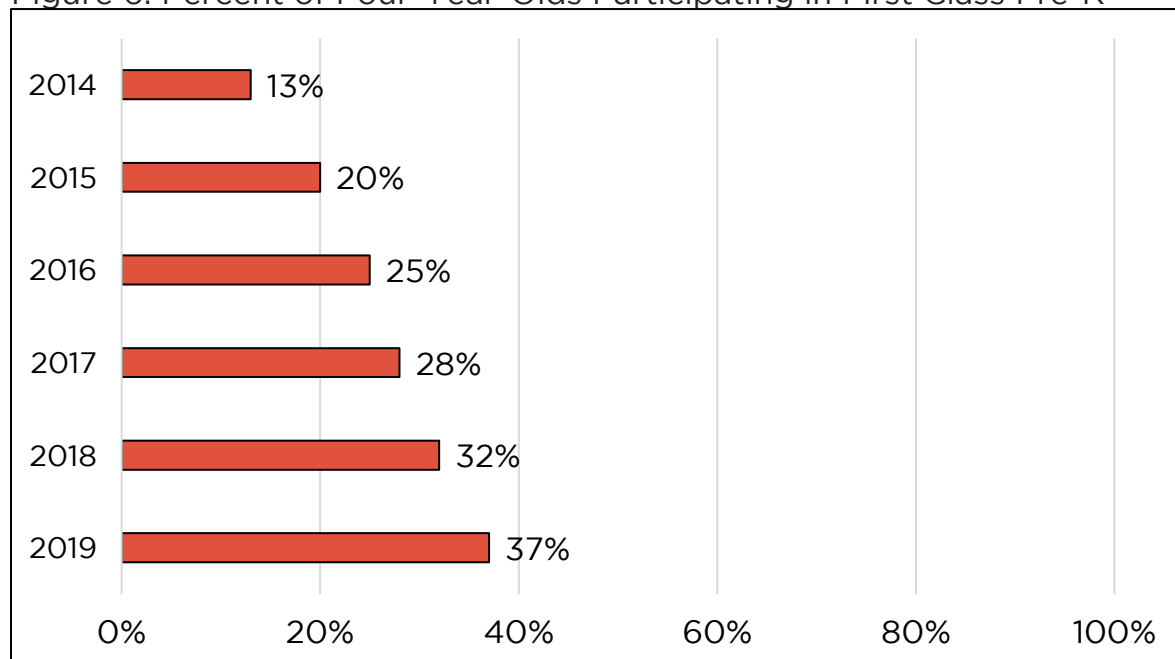


Figure 6. Percent of Four-Year-Olds Participating in First Class Pre-K



While growth in First Class Pre-K has been rapid, some argue the growth has not been rapid enough, noting that only 37% of four-year-olds currently have access to the program. However, Alabama has chosen to focus on quality over quantity. The curriculum helps children prepare and grow in math, language, literacy, cognitive skills, social-emotional development, and physical development. The National Institute for Early Education Research (NIEER) has

routinely cited Alabama's First Class Pre-K program as leading the nation in quality indicators.¹⁶

Moreover, ongoing research conducted by the University of Alabama at Birmingham (UAB) Schools of Education and Public Health and PARCA finds that First Class Pre-K produces significant and meaningful results in academics, attendance, and behavior and that these effects do not fade away as the students age.¹⁷

The First Class Pre-K program is showing positive results and is serving more students each year. Students in the first Pre-K cohort graduated high school in the spring of 2018. The full impact of quality Pre-K is just beginning to be seen. At the same time, the majority of four-year-olds are not participating. A portion of these will be prepared for school through their family and other resources, but a sizable percentage of children are not prepared for school through a rigorous program like First Class Pre-K. This has implications for how these children will proceed in school and their future career readiness.

¹⁶ *The State of Preschool 2017*, National Institute from Early Education Research, <http://nieer.org/state-preschool-yearbooks/yearbook2017>

¹⁷ Alabama Department of Early Childhood Education, Research and Evaluation <https://children.alabama.gov/resources/research/>

The K-12 System

Alabama’s schools are showing improvement but still trail most other states in student proficiency.

ENROLLMENT

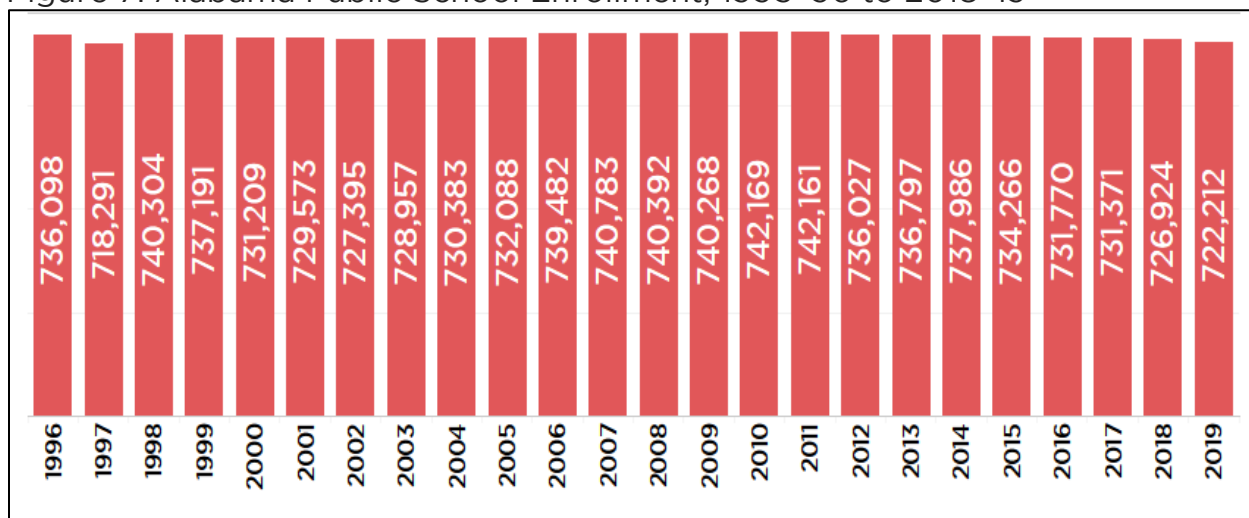
The metric measures:	Total public school fall enrollment, not including Pre-K
Source of data:	Alabama State Department of Education
Relevance to the pipeline:	Enrollment numbers indicate the size of future graduation cohorts and the total number of graduates the public education pipeline can add to the workforce.

Implication for the workforce: Aligned with recent population decreases, enrollment is decreasing. The number of first graders began decreasing in 2016. The effect may not be felt until 2027, when that cohort will be seniors. The more who are kept in school and earn a recognized credential can help to offset these losses.

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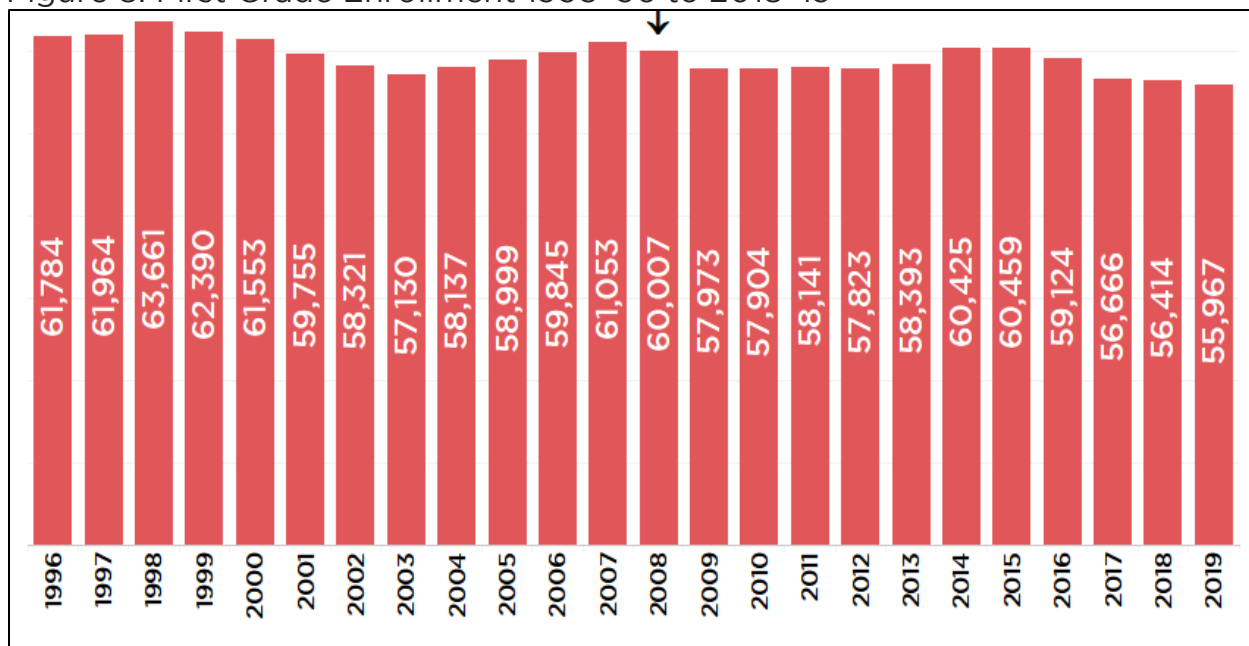
Figure 7 displays enrollment in K-12 public education from 1995-96 through 2018-19 (Fall 1995 and 2018, respectively). The high point was in 2009-10, with 742,169 students enrolled. Total enrollment is decreasing due to a string of smaller classes of children entering first grade. The smaller entering classes reflect smaller numbers of school-age children in the state.

Figure 7. Alabama Public School Enrollment, 1995-96 to 2018-19



For example, the cohort of seniors in 2018-19 were a much larger group as first graders back in 2008 (60,007) than 2019's cohort of first graders (55,967). This is illustrated in Figure 8, which shows the enrollment of first graders decreasing in recent years.

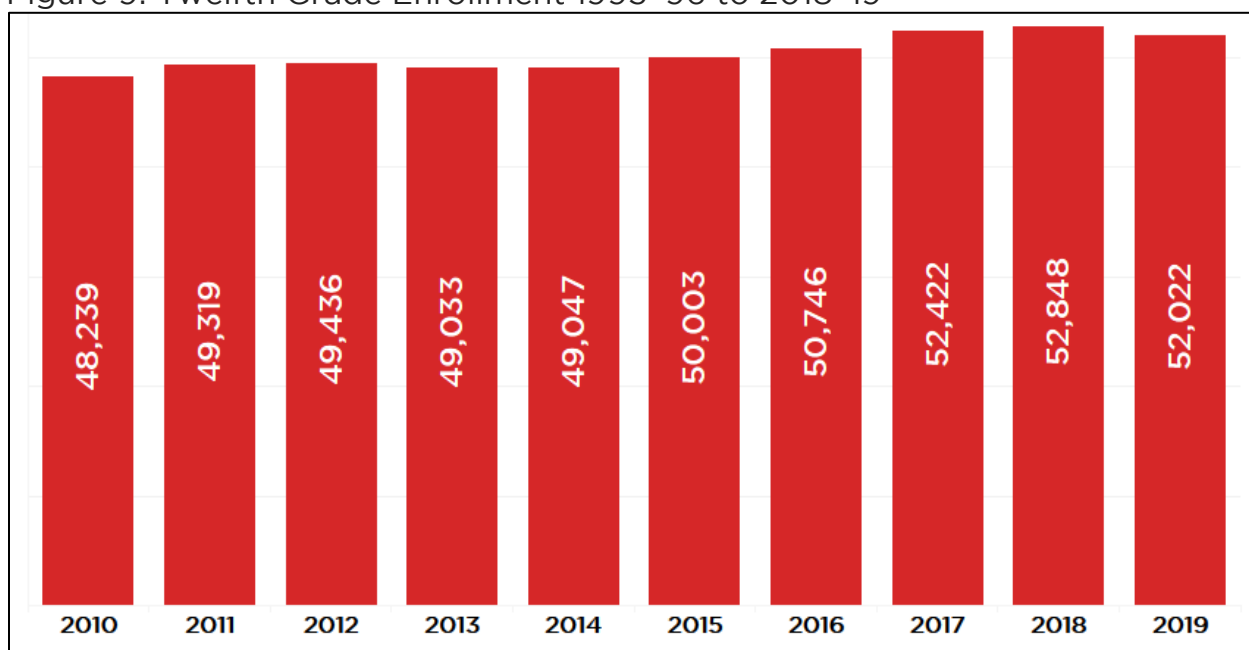
Figure 8. First Grade Enrollment 1995-96 to 2018-19



Around 50,000 students graduate from Alabama’s public high schools every year and enter college or the workforce. Figure 9 shows that after the advent of Plan 2020, 12th-grade enrollment increased. This is possibly due in part to Alabama’s success in keeping more students in school as evidenced by lower drop-out rates and higher graduation rates.

Students who drop out are less likely to participate in the workforce, and the percentage of jobs available for individuals who do not have a high school diploma is shrinking.¹⁸

Figure 9. Twelfth Grade Enrollment 1995–96 to 2018–19



Twelfth grade enrollment includes students from the ninth grade cohort who made it to their senior year, as well as students who transferred into the school and those who may have been held back for another senior year. It

¹⁸ The National Center for Education Statistics reports drop-out rates from the Current Population Survey (CPS) based on the percent of individuals aged 16-24 who are not in school and do not have a high school diploma or GED certificate. This is called the CPS Status Drop-out Rate. The most recent data were reported for 2016, which showed 6.9% of Alabama’s population met this criteria, compared to 7.4% in 2015. The national average was 5.8% in 2016 and 6.0 percent in 2015. Though only a proxy for the direct drop-out rate, the CPS Status measure shows Alabama’s estimated drop-out rate decreasing, and at a faster rate than the national average.

does not include students from the original cohort who dropped out or transferred to another school. CCR rates are calculated based on the number of students in the original cohort enrolled and classified as seniors four years later and who are deemed college and career ready. Graduation rates are calculated based on the number of students in the original cohort who graduated four years later.

THIRD-GRADE PROFICIENCY

The metric measures:	Percent of students scoring proficient on state assessments in third-grade reading and math
Source of data:	Alabama State Department of Education
Relevance to the pipeline:	Early reading by the third grade is a core skill with strong implications for later reading skills, literacy, and career readiness. Math is another early core academic skill that shapes career readiness in later years.

Implication for the workforce: Third-grade reading and math scores are improving slightly on state assessments, although scores and Alabama’s ranking among other states are dropping on national tests. This raises serious concerns about the reading and math foundation of the future workforce.

Figure 9 shows that proficiency in state testing of third-grade math and reading improved from 2013–2014 through 2016–2017. During that period, proficiency was measured by a suite of assessments called the ACT Aspire. The Alabama State Board of Education dropped the ACT Aspire assessments at the end of 2017, switching to assessments designed by Scantron, while launching the design of a new assessment that will be used in the future. The 2017–18 and 2018–2019 results are from the Scantron tests. In its first year,

third-grade Scantron results were roughly equivalent to the previous year's third grade Aspire results in math but indicated significantly higher reading proficiency than the Aspire. In its second year of administration, scores on the Scantron assessment declined in both reading and math.

Figure 10. Third Grade Reading and Math Proficiency, 2014–18

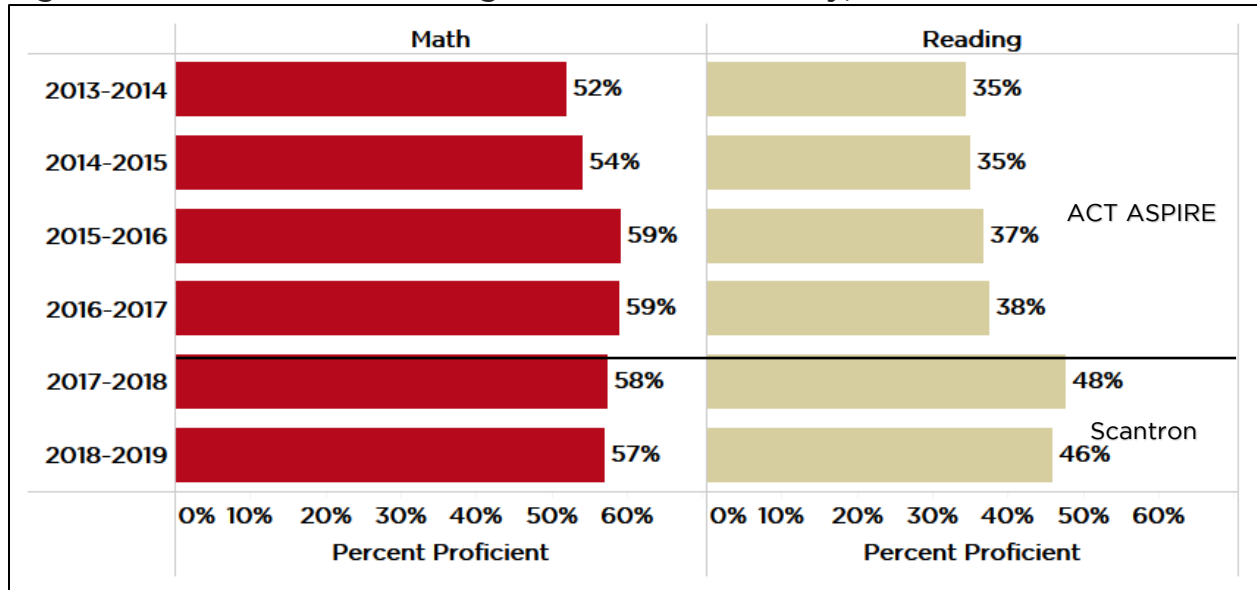


Figure 10 shows the percent of students in each of four proficiency categories. Category labels vary with the assessment. This report uses the labels provided by Scantron, the state assessment used in 2018 and 2019.

- Level 1 (Red—Emerging Learner)
- Level 2 (Yellow—Developing Learner)
- Level 3 (Light Green—Proficient Learner)
- Level 4 (Dark Green—Distinguished Learner)

The highest levels for those students who achieve proficiency or above are dark green and light green. Similar to a traffic light, these colors signal “go.” This is followed by yellow (“use caution”) and red (“stop”).

Figure 11. Third Grade Reading Achievement Levels, 2014-19

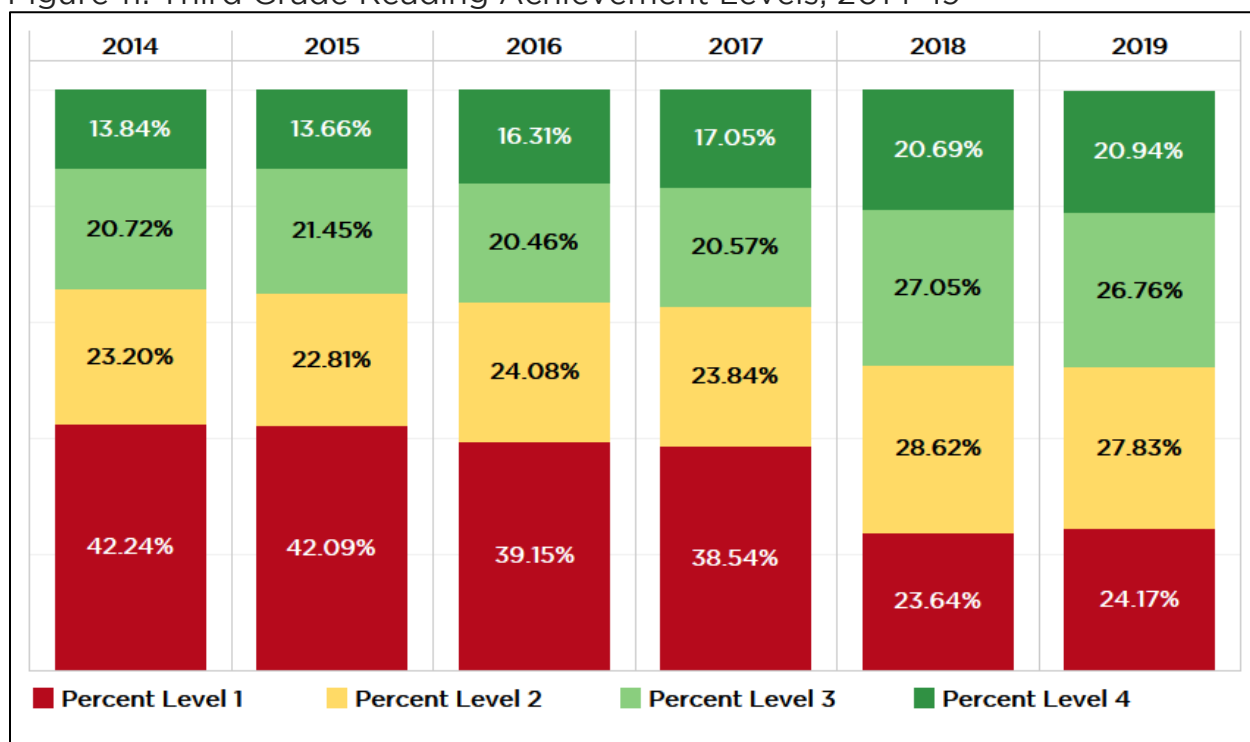


Figure 11 shows an increase in the percent of students in the highest levels (green) and a decrease in the percent of students in the lowest level (red). These changes could simply be a function of the change in tests that occurred in 2018. Regardless, the latest test results show that 13,375 third graders, 24%, read at the lowest level.

Following several years of declining scores in reading, in 2019 the Alabama Legislature adopted the Alabama Literacy Act. This law provides that beginning in the 2021-22 school year, students falling into the lowest group in reading may be at risk of being retained. For more on the Literacy Act, see Appendix A.

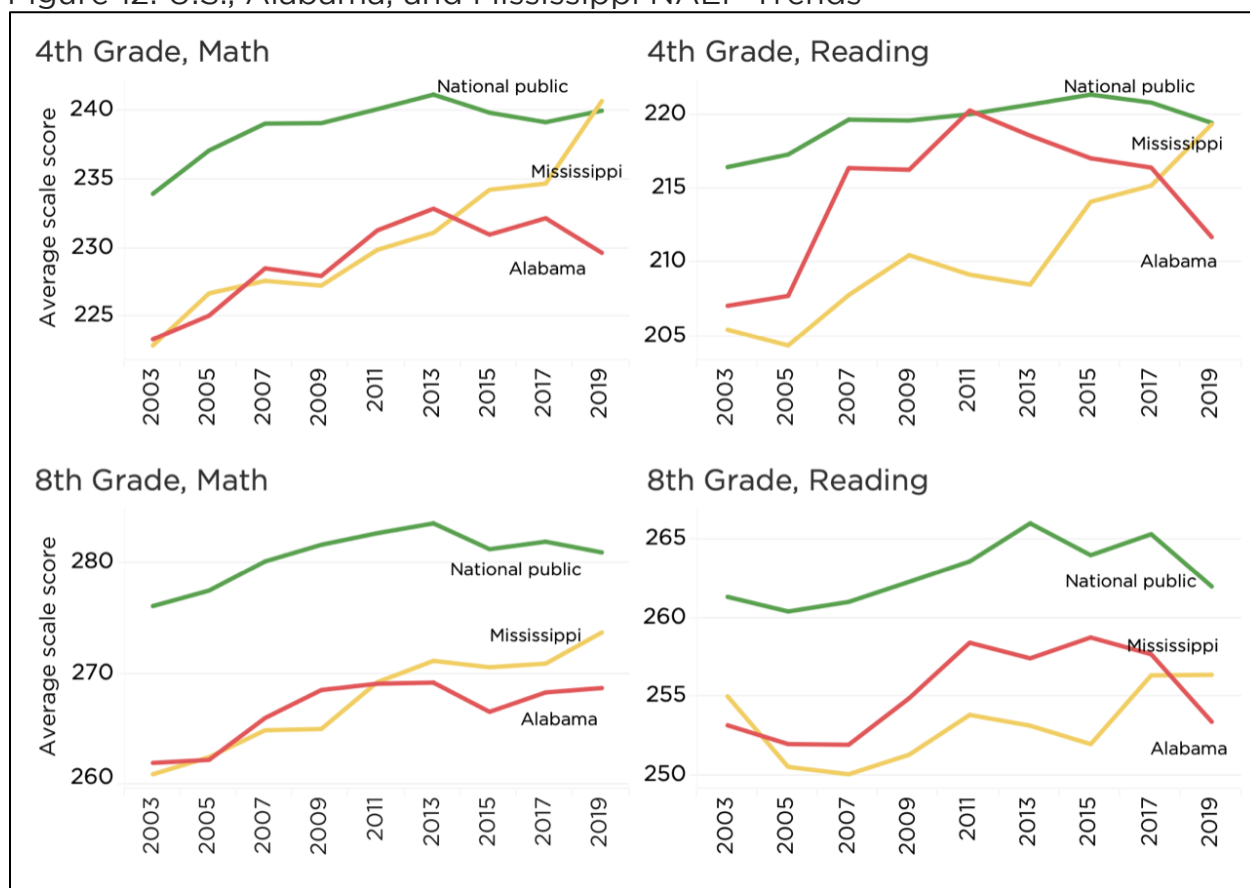
NAEP Scores

The metric measures:	Percent of students scoring proficient on national assessments in fourth- and eighth-grade reading and math
Source of data:	National Center for Education Statistics
Relevance to the pipeline:	NAEP scores provide the only valid comparison of Alabama students to those in other states.

Implication for the workforce: Alabama students are falling behind their peers in other states.

In contrast to state assessments, the nationally normed National Assessment of Educational Progress (NAEP) test shows Alabama fourth- and eighth-grade scores significantly dropping in reading and math. NAEP is the only common test taken by all students across the country and is highly respected for its high technical quality, representing the best thinking of assessment and content specialists, state education staff, and teachers.

Figure 12. U.S., Alabama, and Mississippi NAEP Trends



The 2019 NAEP results show that 28% of Alabama's fourth graders scored proficient or above in reading, down from 31% in 2017. The average score dropped from 216.42 in 2017 to 211.73 in 2019. In math, where Alabama is now last in the country, the percent of students scoring proficient or above in 2019 was 28%, compared to 31% in 2017. Average scores dropped from 232.17 to 229.65.

NAEP reading and math tests reflect higher rigor than Alabama's state tests. As other nearby states make progress on rigorous nationally normed tests in reading and math, this could have serious implications for the quality of the workforce in Alabama in the future, though the impact is some years off.

In 2011 Alabama enjoyed a high point when the state's fourth graders scored at the national average in reading, having made the largest improvements in the U.S. That growth coincided with and has been generally attributed to the

Alabama Reading Initiative (ARI). ARI emphasized a school-wide commitment to getting all students reading at grade level, with an emphasis on kindergarten through third grade. A state-funded reading coach was placed in every Alabama elementary school and intense professional development was provided to teachers on research-based approaches to teaching reading.

Since then, funding for ARI has been reduced, and schools are allowed to repurpose the state-funded reading coaches for other purposes. Both of these events directly undermined the

success achieved earlier in the decade. Reading scores on NAEP began drifting, and in 2019, dropped sharply in both fourth and eighth grades.

Math results for Alabama students were equally disturbing. Alabama school children in both the fourth and eighth grades had the lowest average test scores in the United States. Alabama ranked behind all other states in 2015. In 2017, Alabama students climbed a couple of notches in the rankings

but slipped back into last this year. The *Governor's Advisory Council* for Excellence in STEM has issued a wide range of recommendations, with math coaches being provided in all elementary schools similar to reading. For more on the Council, see Appendix B.

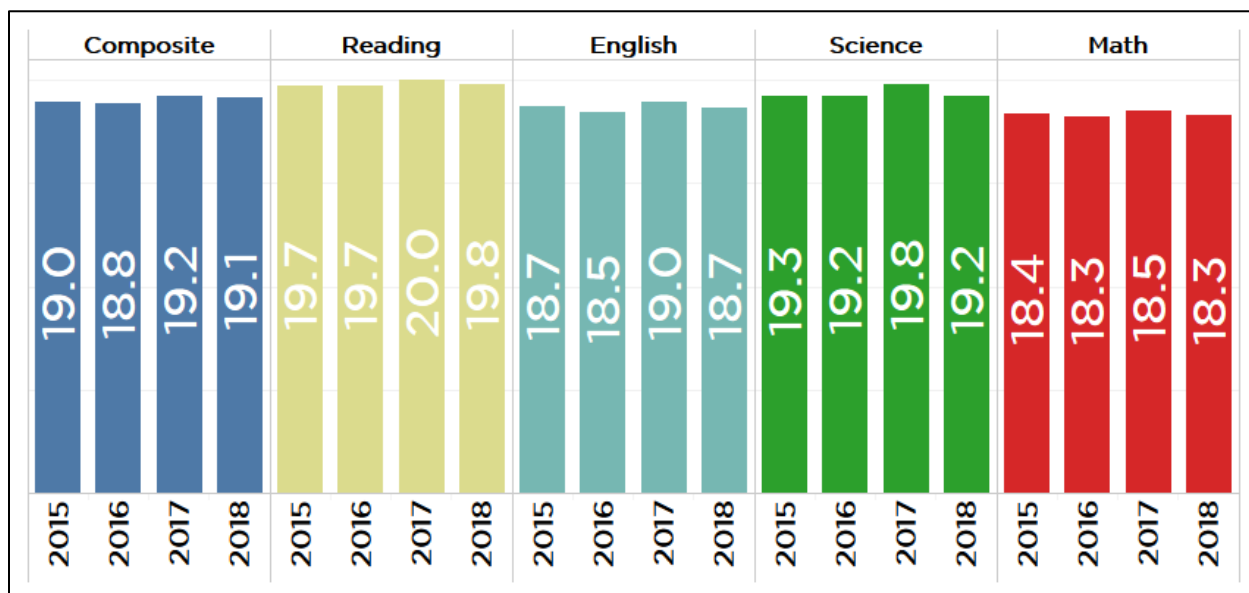
“You can always expect to experience problems and challenges. The fact that you have problems is not the issue. It’s how you respond to the problems that makes the difference. Are our schools, teachers and support services capable and motivated to meaningfully respond to a student’s unique challenges in learning? Can you save this child’s life? That’s what is important.”
—Elementary Public School Teacher in Alabama

ACT SCORES

The metric measures:	Average ACT scores of graduating seniors in Alabama public high schools
Source of data:	Alabama Department of Education
Relevance to the pipeline:	Predicts likelihood of success in college-level coursework. Officially counted as one of the criteria for being designated college and career ready in Alabama.

Implication for the workforce: Over the past four years, scores have remained flat.

Figure 13. ACT Scale Scores by Subject and Year 2015–18

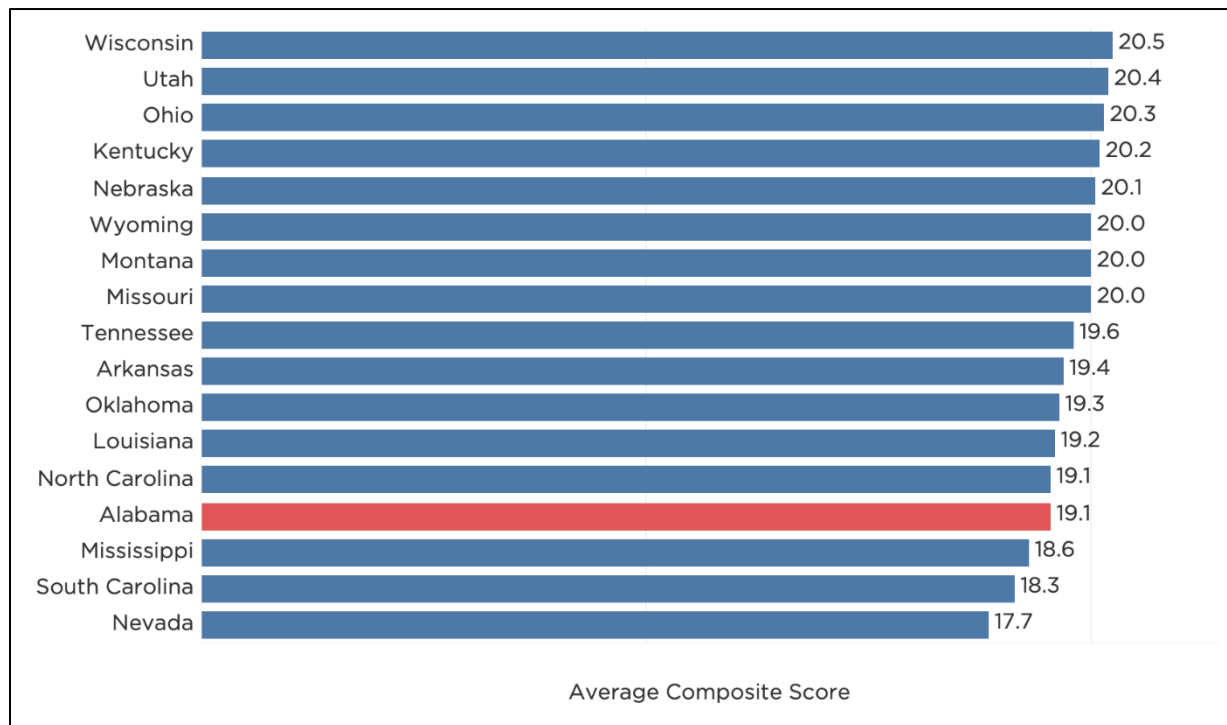


Alabama requires all public high school students to take the ACT exam in their junior year at no charge, whether or not they plan to apply to college. Students may take the exam additional times at their own expense. The results reported here are for students who graduated in 2018. If a student

takes the ACT multiple times, BEA's analysis uses the student's highest score in each subject.

Alabama is one of 17 states that provides the ACT to all high school students. The average composite score among these 17 states is 19.5. At 19.1, Alabama ranks 13th, tied with North Carolina. Figure 14 compares Alabama to the other 100% states.

Figure 14. 2018 Average ACT Composite Scores for States Where All Students Take the Exam



Median entering ACT scores of students entering colleges in Alabama ranged from 16 to 28.¹⁹

More Alabama students took the ACT in 2018. This was particularly notable among Hispanic students. Though small in total numbers compared to whites and blacks, the number of Hispanics taking the ACT increased from 1,867 in

¹⁹ This refers to the middle score of entering freshmen reported by individual institutions, as opposed to the average score of all students shown in Figure 14. Institutional median (middle) scores ranged from 16 to 28.

2015 to 2,886 in 2018 (55% increase). Black students taking the ACT increased over this period from 16,602 to 16,968, a 2% increase, and whites slightly decreased from 29,337 to 29,100, less than 1% change.

Figure 15. ACT Composite Scores by Race

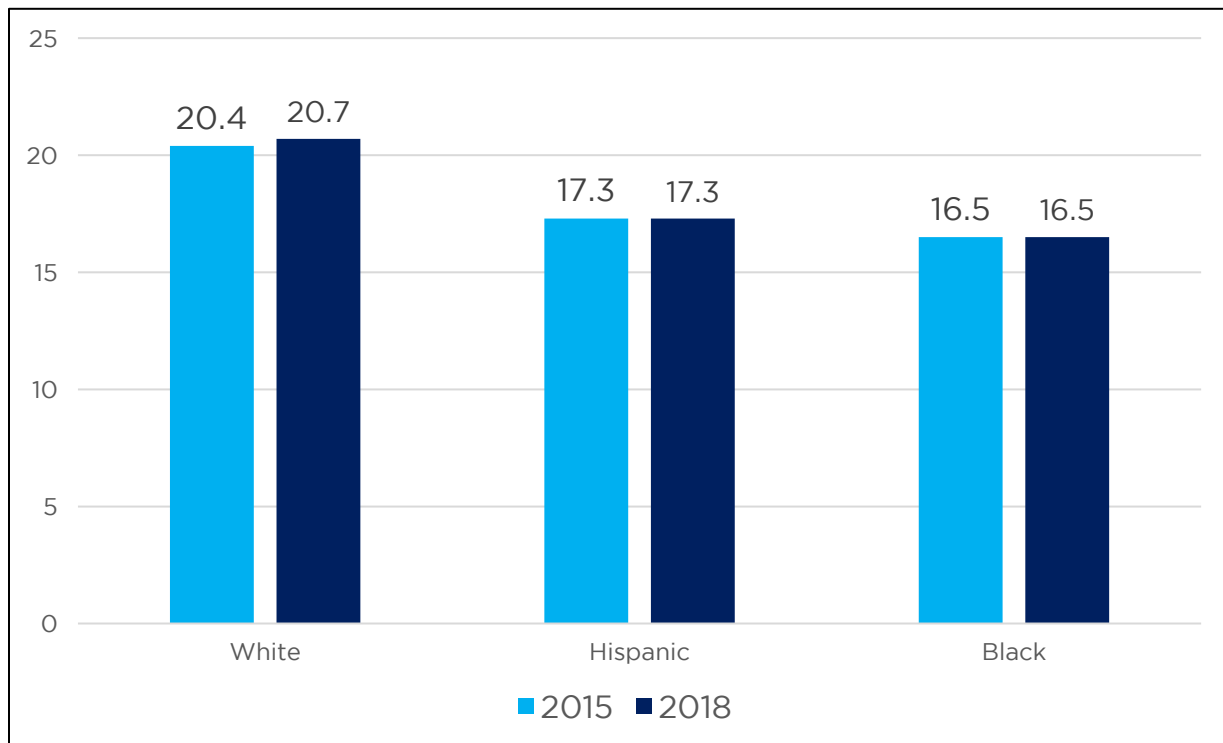


Figure 15 shows that between 2015 and 2018, the composite scores for white students increased very slightly, and remained exactly the same for students who are black and Hispanic.

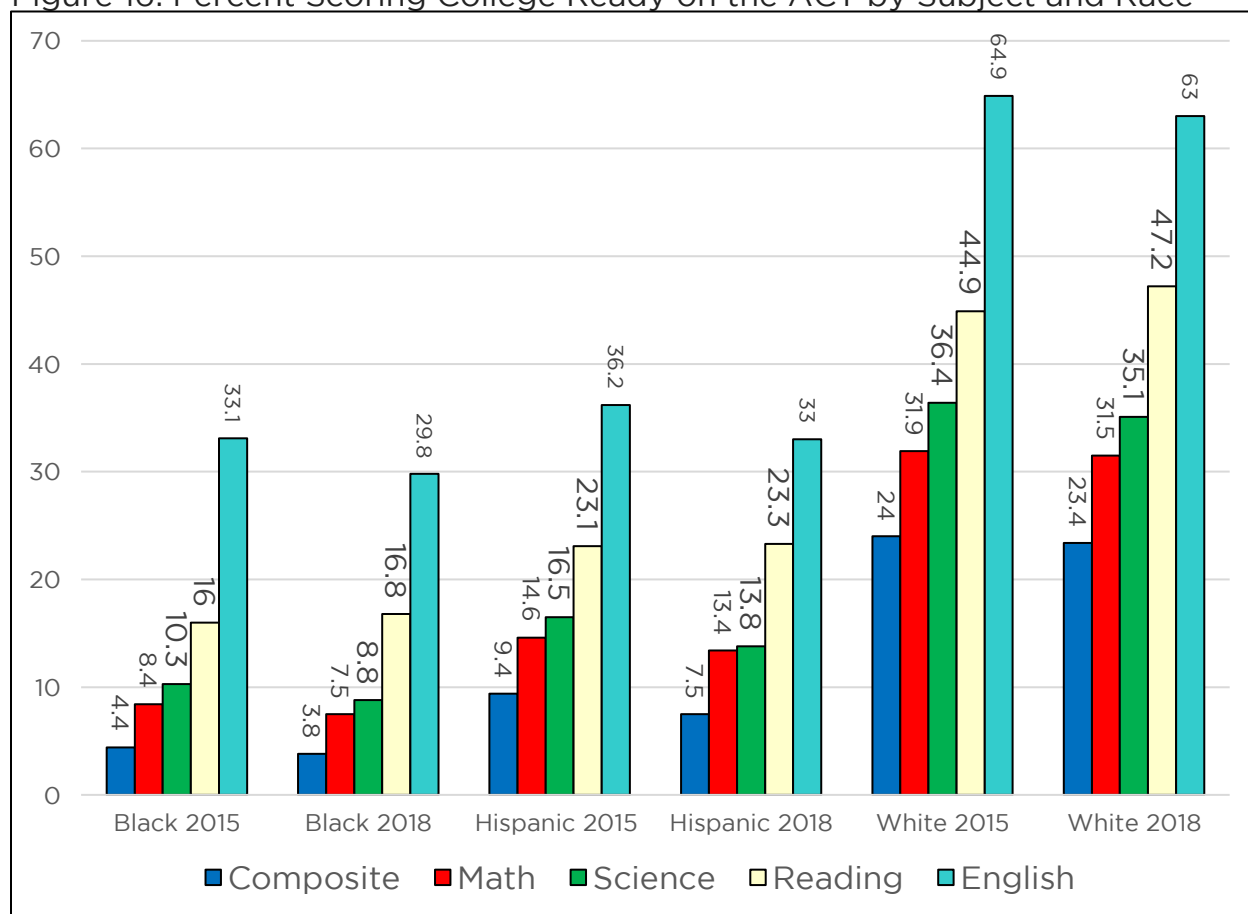
In addition to composite scores, each subject test has a score set by ACT that determines if a student is college-ready.²⁰ Here, college ready means the student has a 50% or greater likelihood of earning a B in a first-year college course in that subject. The benchmark score varies by subject:

²⁰ See www.act.org/content/act/en/college-and-career-readiness/standards.html

- English College Ready Benchmark = 18
- Mathematics College Ready Benchmark = 22
- Reading College Ready Benchmark = 22
- Science College Ready Benchmark = 23

One way for Alabama students to be counted as College and Career Ready (CCR) is if they meet the benchmark in one or more subjects. Figure 16 shows the percent of students scoring college ready by subject and by race in 2015 and 2018.

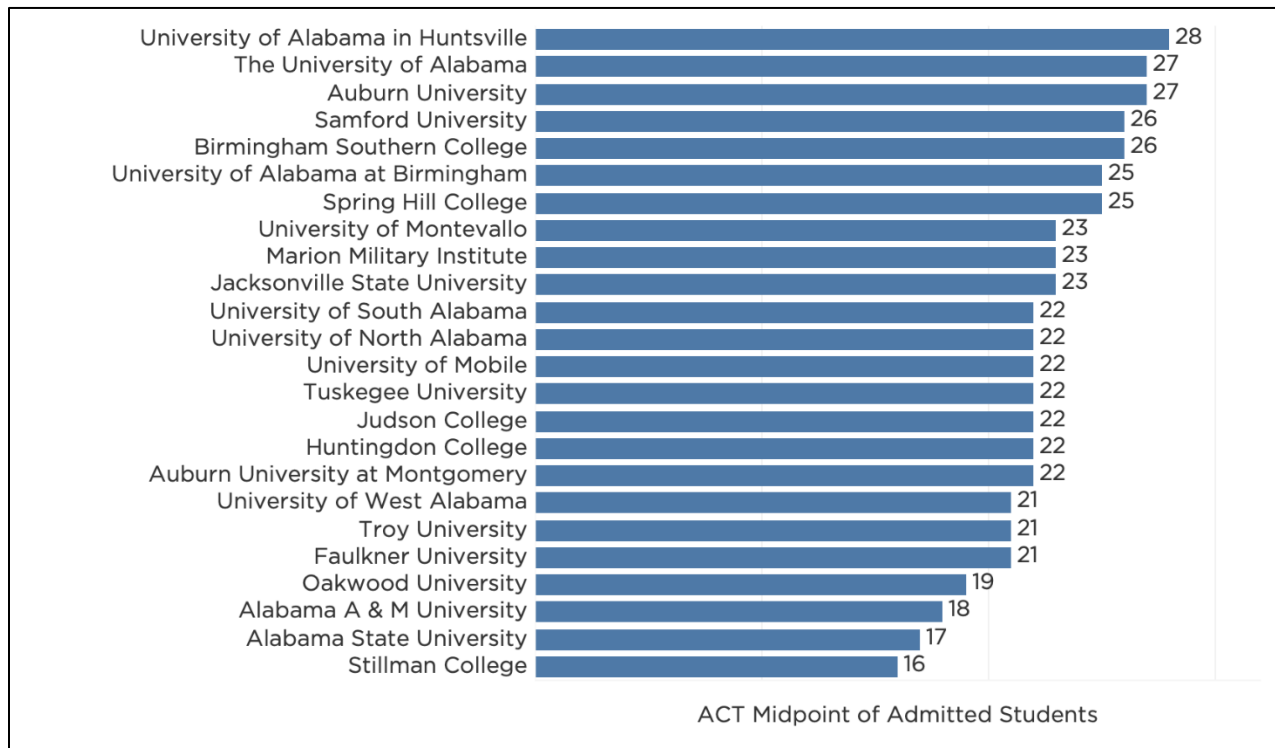
Figure 16. Percent Scoring College Ready on the ACT by Subject and Race



These data show that despite overall composite scores remaining steady over time, the percent college ready in each subject, except reading, has decreased for students who are black, Hispanic, or white.

Keep in mind that a composite score of 18 is considered a minimum threshold score for college admission at several state colleges. Others have lower thresholds, including open admissions. On the other end, a score of 25 or higher is expected at more competitive colleges, while 30 is the minimum threshold at some of the nationally elite schools such as Princeton. Figure 17 lists the median entering ACT composite score students at Alabama colleges. Historically black colleges consider it part of their mission to admit students who may not have had the academic preparation to perform well on the ACT. The average ACT score for black students in Alabama is 16.5.

Figure 17. Median Entering ACT Score for Alabama Colleges, 2018



WORKKEYS ASSESSMENT

The metric measures:	Scores on WorkKeys assessments of applied cognitive skills related to math, reading, and graphic literacy
Source of data:	Alabama State Department of Education
Relevance to the pipeline:	Identifies students who demonstrate the cognitive skills needed to function in the workplace. Officially counted as one of the criteria for being designated college and career ready in Alabama. Considered highly relevant to CTE jobs.

Implication for the workforce: WorkKeys scores have increased, but the overall percent workforce ready did not change over the past year.

The WorkKeys Assessment is an assessment of workplace skills developed and administered by ACT, the same nonprofit that develops and administers the more familiar ACT exam. WorkKeys has emerged as another source of information for making employment decisions and helping prospective workers learn about strengths and weaknesses and opportunities for growth. Communities in Alabama use WorkKeys as a baseline for developing their workforce and encouraging economic growth. Using job profiling data provided by ACT, the Alabama Department of Labor maintains data listing the median WorkKeys scores for high demand occupations requiring an associate's degree or less.²¹ See a sample in Appendix F.

²¹ High Demand Occupations Requiring Associate Degree and Under.
<http://www2.labor.alabama.gov/workforcedev/>

Assessments.

WorkKeys consists of three tests of applied cognitive skills relevant, according to ACT's research, to over 20,000 occupations.

The Applied Math test measures critical thinking, mathematical reasoning, and problem-solving techniques for situations in today's workplace.

The Graphic Literacy test measures the skill needed to locate, synthesize, and use information from charts and graphs.

The Workplace Documents test measures the skills needed to read and understand written text such as memos, letters, directions, signs, notices, bulletins, policies, and regulations on the job.

Students do not earn a numerical score similar to the ACT exam. Instead, they earn one of four certificates: Platinum, Gold, Silver, or Bronze. These markers indicate that students have demonstrated the applied foundational skills for a given percentage of jobs in ACT's database.

- Platinum: Those earning a Platinum level certificate should have the applied foundational skills for 96% of jobs in the database.
- Gold: Those earning a Gold level certificate should have the applied foundational skills for 90% of jobs in the database.
- Silver: Students scoring at the Silver level should have the applied foundational skills for 71% of jobs in the ACT database.
- Bronze: Students earning a Bronze certificate are judged to be ready for 16% of jobs in the ACT database.

It is possible for a student to earn no certificate. Students who earn a certificate are awarded a National Career Readiness Certification.

In Alabama, students earning a Silver certificate or above are considered workforce ready.

Figure 18. Percent of Alabama Graduates Workforce Ready on WorkKeys, 2015-18

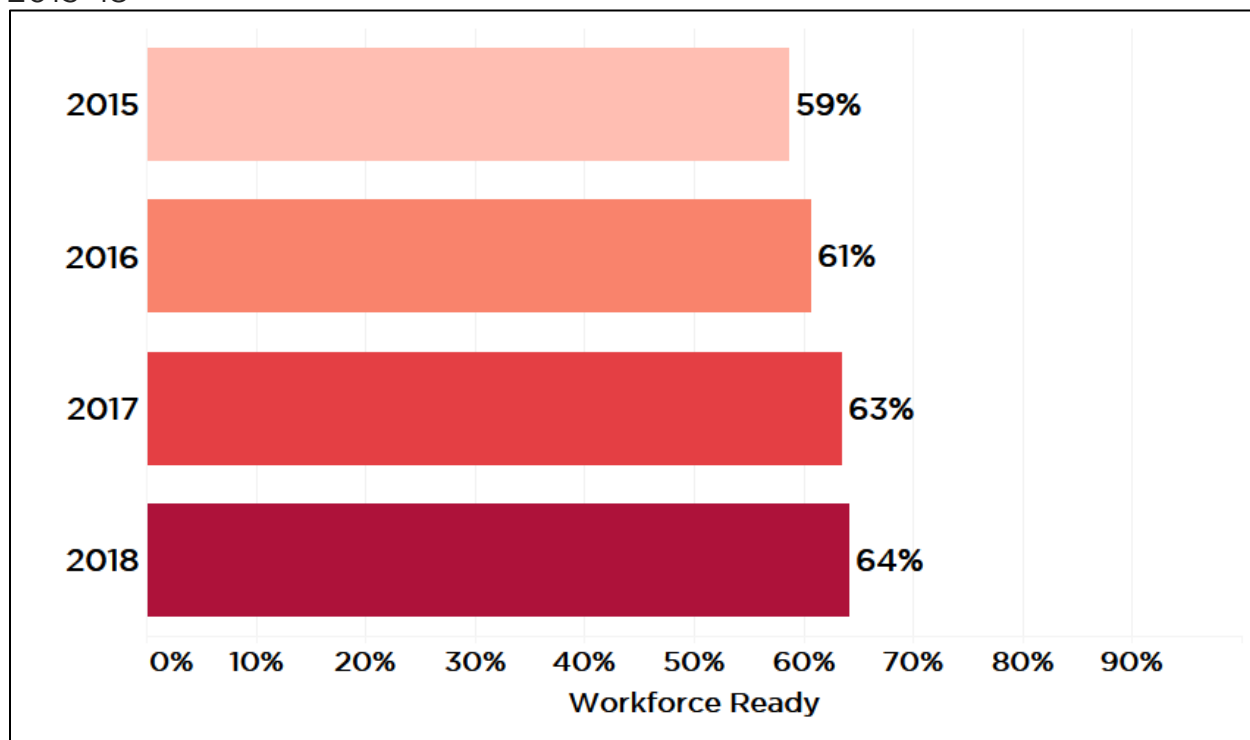


Figure 18 shows that in 2018, 64% of high school graduates in the state were deemed workforce ready, meaning they earned a Silver, Gold, or Platinum certificate on the WorkKeys Assessment. The percentage steadily increased from 58.8% in 2015 to 60.8% in 2016 and 63.5% in 2017. The increase from 2017 to 2018 was comparatively small.

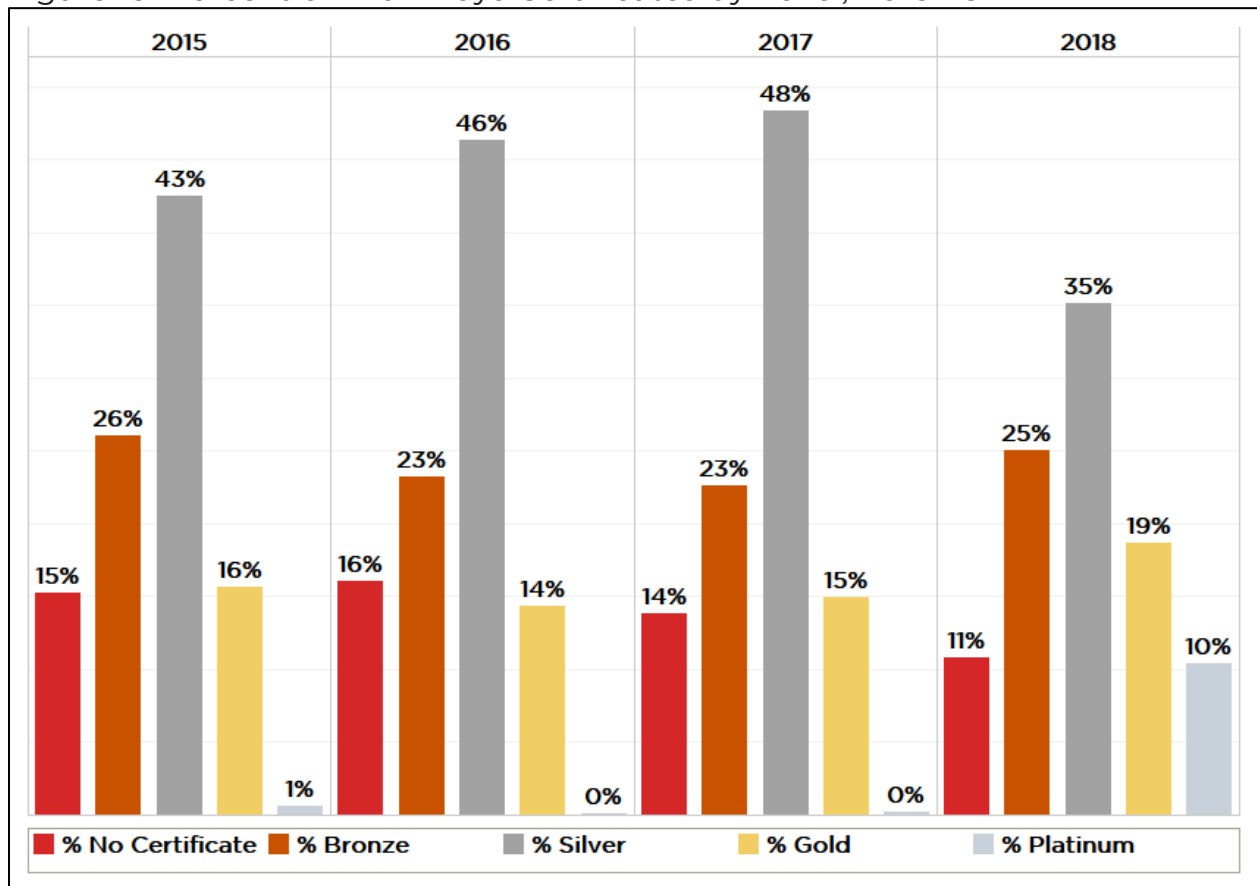
As noted, students are deemed workforce ready if they achieve certification at the Platinum, Gold, or Silver levels. Figure 19 shows that the percent at each of these levels increased moderately from 2015 to 2017, and the distribution of students across the different levels remained about the same. However, there was a significant increase in the upper-level certificates in 2018. ACT's decision to change the graphic literacy test apparently led to dramatic changes in the scoring of the WorkKeys test, producing far more Gold and Platinum level certificates.

Platinum certificates dramatically increased from essentially zero percent in all previous years to 10% in 2018. Gold certificates had remained fairly stable,

around 15% in the previous three years, before climbing to 19% in 2018. These increases came at the expense of Silver certificates, which dropped to 35% in 2018 after increasing from 43% in 2015 to 48% in 2017.

Taken together, figures 18 and 19 illustrate that roughly the same percent of Alabama students are workforce ready, but the distribution of work-ready students is shifting to higher certification levels. The percent of students earning Bronze certificates increased, and the percent of students with no certificate decreased. This is a positive trend, with more students edging toward the readiness threshold.

Figure 19. Percent of WorkKeys Certificates by Level, 2015-18



HIGH SCHOOL GRADUATION AND COLLEGE & CAREER READINESS (CCR)

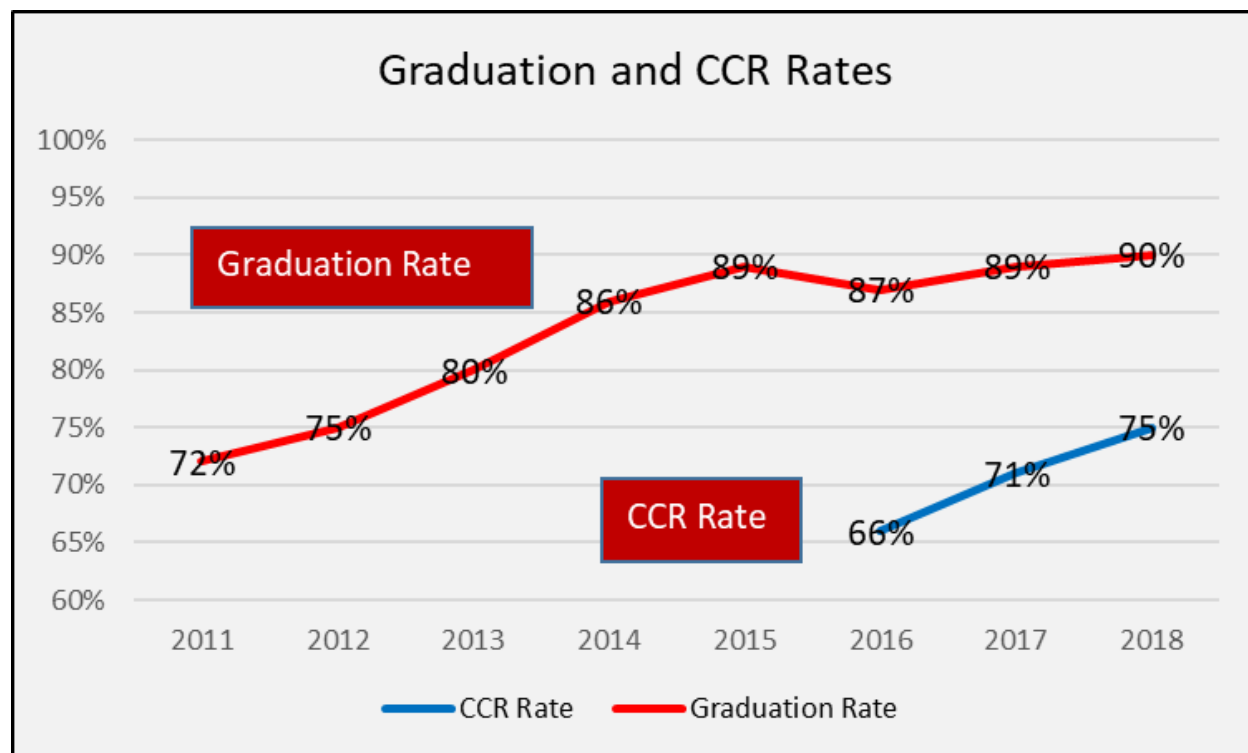
The metrics measure:	Percent of freshman cohort graduating from high school in four years and percent of these students achieving College and Career Readiness
Source of data:	Alabama State Department of Education
Relevance to the pipeline:	With the exception of reading scores, these are possibly the most important measures of the quality of the education-to-work pipeline, showing the percent ready for work as measured by the state.

Implication for the workforce: Graduation and CCR rates are increasing. Concerns are raised over the authenticity of Alabama's criteria as valid measures of CCR.

Research has shown that the education level of a community affects its economic development, cultural capital, conditions for health and crime, and quality of life.²² Alabama's Plan 2020, developed in 2012, set high expectations for the state's education system. The plan called for increasing Alabama's high school graduation rate from 72% in 2011 to 90% by 2020 and that all graduates would be college and career ready. Figure 20 shows the percentage of students graduating and the percentage of those graduates deemed college and career ready.

22 McMahon, W. (2011). Education and Human development: Major Themes in Education. Routledge, Francis & Taylor Group. Also see Perry Preschool Project findings at <https://highscop.org/perry-preschool-project>.

Figure 20. High School Graduation, 2011-18; College and Career Ready Rates



In 2018, the state achieved its vision of a 90% graduation rate. This is a remarkable achievement—occurring far ahead of schedule. Progress on the college and career ready measure lags, but the gap is narrowing. A complete list of graduation and CCR rate for all school systems and high schools in Alabama can be found in Appendix E.

In 2016, Alabama graduated 87% of its students, though only 66% were college and career ready. In 2017, the gap closed, with 89% graduating and 71% college and career ready. By 2018, 90% graduated, and 75% were college and career ready.

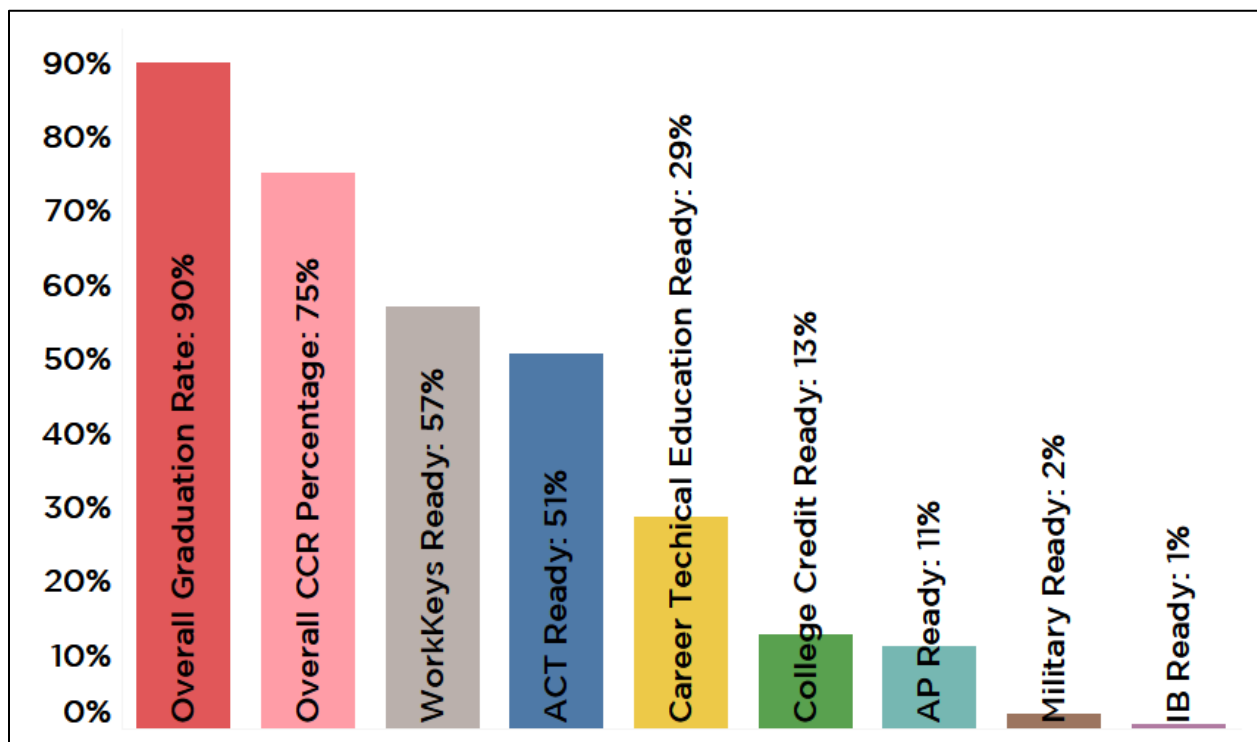
What does it mean to be College and Career Ready? In Alabama, high school graduates are classified as College and Career Ready (CCR) if they meet at least one of the following criteria:

1. Earn a benchmark score in at least one subject on the ACT exam.

2. Score at the Silver level or above on the WorkKeys Assessment.
3. Earn a qualifying score on an Advanced Placement exam.
4. Earn a qualifying score on an International Baccalaureate exam.
5. Earn an approved industry credential through Career Technical Education.
6. Earn dual enrollment credit through an Alabama college or university.
7. Enlist in the military.

Figure 21 displays the 2018 graduation rate (90%), the percentage of high school seniors deemed college and career ready (75%), and the percent of seniors achieving readiness on one of the seven performance measures discussed above. Please note that previous results shown for WorkKeys were focused on high school graduates, not all seniors, as shown below.

Figure 21. Percent College and Career Ready by CCR Measure, 2018



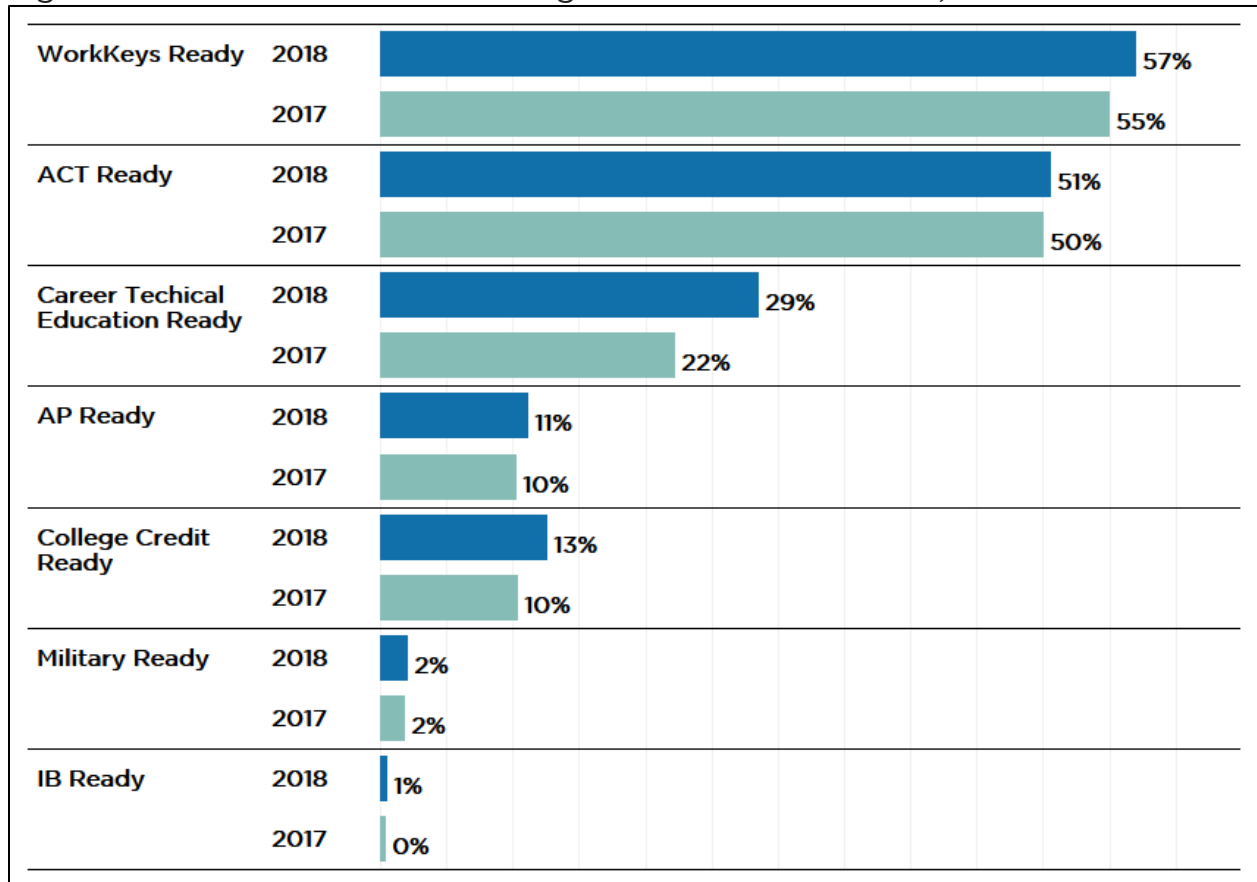
Statewide, the percentage of seniors testing “ready” is highest for the WorkKeys assessment, followed closely by the ACT. Those are the two main channels through which a CCR rating is achieved, although a growing number

of students are deemed CCR by earning a credential in a Career Technical Education (CTE) field. Earning college credit or a qualifying score on an AP exam are also used by a smaller percentage of students. A very low percentage of seniors achieve a CCR rating via enlistment in the military or through an International Baccalaureate exam.

Figure 22 shows that (CTE) certificates are the fastest-growing means for classifying students as College and Career Ready. Qualifying scores on the ACT and WorkKeys assessments are the two most common measures used to classify students as College and Career Ready.

Disparities in performance exist across schools and student subgroups.

Figure 22. Student Growth in College and Career Measures, 2017-18



FREE APPLICATION FOR FEDERAL STUDENT AID (FAFSA)

The metric measures:	Percent of seniors in Alabama completing FAFSAs
Source of data:	Alabama Possible and US Department of Education
Relevance to the pipeline:	Economically disadvantaged students completing FAFSAs are more likely to attend and complete college.

Implication for the workforce: The rate of FAFSA completions has grown significantly in the past but failed to grow in 2018–19. This could predict a leveling-off trend in college-going and graduation rates.

Postsecondary enrollment is a necessary and obvious precursor to earning a postsecondary credential. As the state makes progress toward 500,000 highly skilled workers, graduates of postsecondary institutions will play a large role in achieving this goal. Research demonstrates that enrollment in postsecondary education is positively correlated with completion of the Free Application for Federal Student Aid (FAFSA).²³ In fact, 90% of students who complete the application enroll in college the following fall.

Issues related to financial assistance are especially pertinent to Alabama. Alabama is the sixth poorest state in the nation, with 16.9% of the state and 25.4% of children living below the federal poverty line.²⁴ A significant factor contributing to poverty is the lack of educational opportunity among the urban and rural poor in the state. This affects the life chances of children growing up in these communities. Moreover, children in all communities can

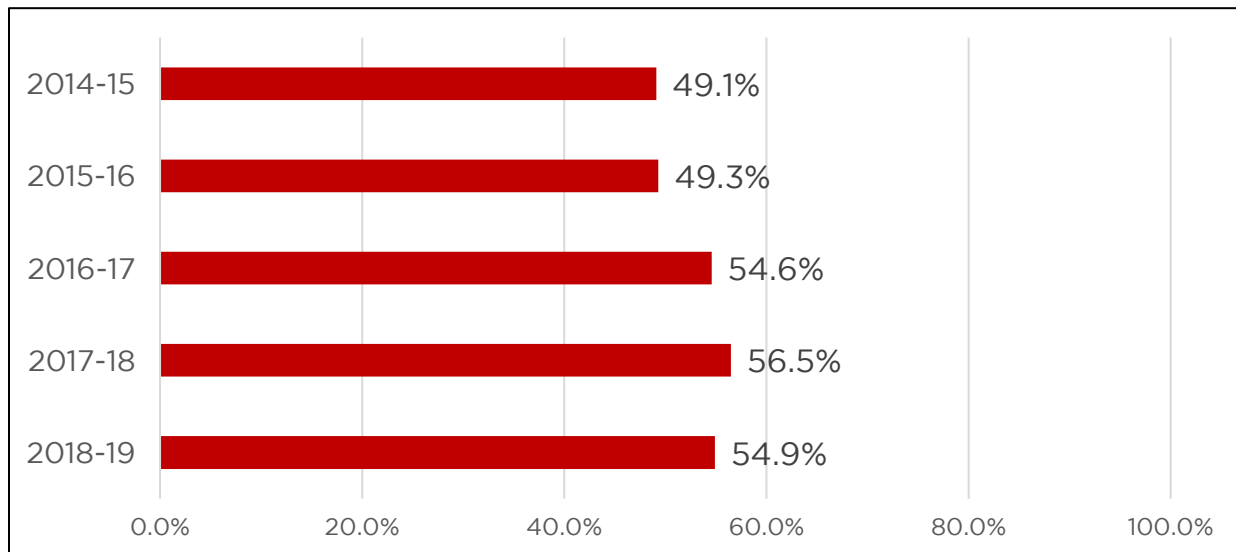
²³ *National FAFSA Completion Rates for High School Seniors and Graduates*, National College Access Network, found at www.collegeaccess.org, 2019.

²⁴ US Bureau of Census Small Area Income and Poverty Estimates, 2017–18

benefit from the FAFSA, and many school-based and private grants and scholarships require a FAFSA application prior to consideration.

Figure 23 shows that Alabama has made progress in the percent of students completing FAFSA applications—until this past year. The FAFSA completion rate increased dramatically in 2016–17, showed positive but smaller growth in 2017–18, and dropped off in 2018–19.

Figure 23. Alabama FAFSA Completion Rates 2014–15 to 2018–19



Alabama’s improved performance in FAFSA completion rates can be attributed, in large measure, to the work of Alabama Possible, a statewide nonprofit headquartered in Birmingham.

FAFSA: An Alabama Example

In 2014, the Sheffield City School System had the lowest college-going rates of any system in the state, with only 36% of graduates going on to a two-year or four-year college. Since then, Sheffield has shown more improvement on that measure than any other system. In 2017 and 2018, 100% of Sheffield graduates applied to at least one college.

Through effective leadership, Sheffield reshaped the local mindset with new excitement about their children attending college.

Still, many families just assumed that college wasn't a possibility because they didn't have the personal resources to pay for it.

In response, students and families were introduced to FAFSA and Alabama Possible. Working with Alabama Possible's Cash for College program, the school got real-time data on which students had started the Free Application for Federal Student Aid (FAFSA) application, who had finished, and who hadn't. Help was offered to those who were encountering difficulties in the often complicated and unfamiliar process of applying.

FAFSA played an important role in helping Sheffield's students attend college.

COLLEGE ENROLLMENT AND REMEDIATION

The metrics measure:	Two- and four-year college-going rate and percent enrolled in remediation
Source of data:	Commission on Higher Education
Relevance to the pipeline:	Students enrolled in higher education are on track to earn a high-value credential. Students assigned to remedial classes face a hurdle and extra time and expense on the route to attainment.

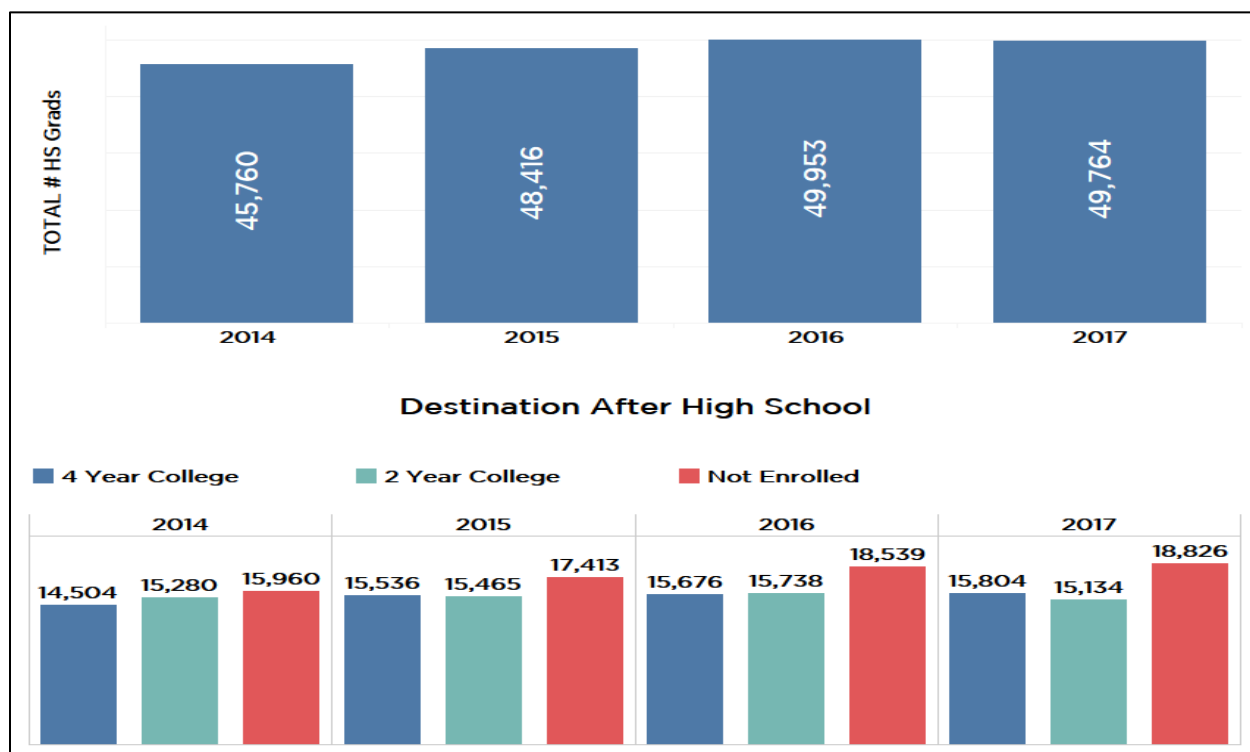
Implication for the workforce: The college-going rate is decreasing in Alabama and across the US, potentially providing fewer members of the population with long-term career-ready skills. Remediation numbers are decreasing.

The college-going rate for Alabama public high school graduates declined in 2017 for the first time in three years.

In 2014, the first year this set of statistics were produced, 65% of high school graduates enrolled in a two-year or four-year college the year after their graduation. In 2017, 62% of graduates enrolled. While the college-going rate has edged down, the number of high school graduates has been going up, as high school graduation rates have climbed. Therefore, although the rate was lower, more students entered higher education. At the same time, though, the number of students graduating from high school but failing to enroll has climbed even more sharply, now accounting for 38% of high school graduates.

The rise in those not enrolling may be related to the economy. When unemployment is low, graduates are drawn directly into the workforce. However, for the long-term prospects of individuals and the state as a whole, it is preferable to have more people earning college degrees or high-value advanced credentials.

Figure 24. Alabama College-Going Rates and Destinations, 2014-17



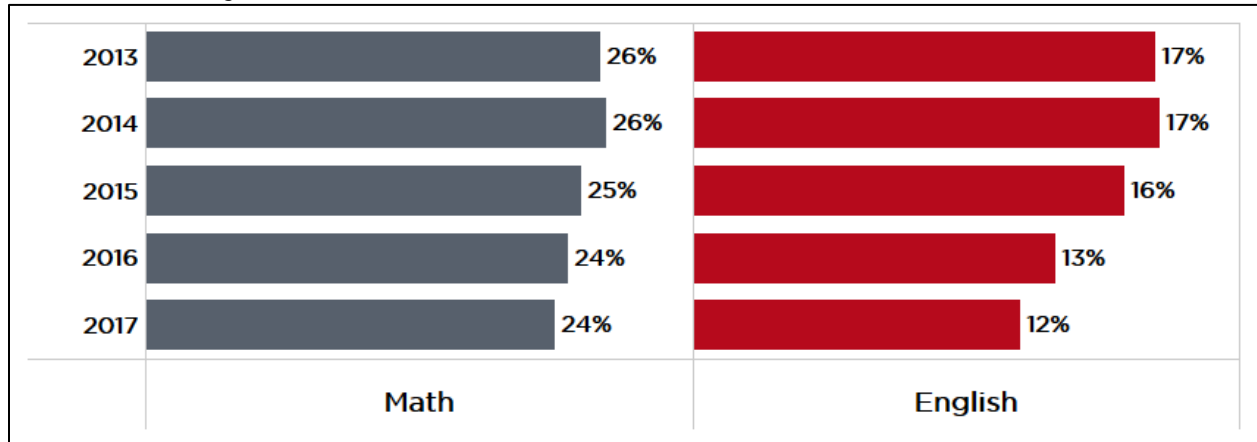
REMEDIATION IN HIGHER EDUCATION

College-going is important. So, too, is the overall readiness of college freshmen when they arrive on campus. The Alabama Commission on Higher Education collects data on math and English remediation among entering freshmen. Students deemed not ready for college-level work are required to first take and pass remedial courses. There is a cost for these classes but no credit toward graduation. Thus, remedial classes add to both the time and financial commitment required to earn a postsecondary degree. Students required to take remedial courses are far less likely to complete a postsecondary degree compared to other students.²⁵ At the same time, students who need remediation and receive it are more likely to persist in college and graduate than students who need remediation and do not receive

25 https://www.ecs.org/wp-content/uploads/Developmental-Education_An-Introduction-for-Policymakers.pdf

it.²⁶ Figure 25 displays math and science remediation rates in Alabama's public postsecondary institutions. Data is for two- and four-year institutions, but 80% of students requiring remediation are enrolled in a two-year system.

Figure 25. Remediation Rates for Entering Freshmen in Alabama Public Postsecondary Institutions



The percentage of students graduating from Alabama high schools assigned to remedial education before embarking on college courses continues to drop in Alabama, as it is nationally. Continuing progress on rates of remedial education is noteworthy, since it has come during a period in which high schools are charting higher graduation rates. Higher graduation rates have prompted concern that, in some instances, schools might be lowering standards to show higher graduation rates. However, this data suggests that the students entering college are increasingly better prepared.

The decline in the remediation rate may also be influenced by changes taking place at colleges. Both two- and four-year colleges are implementing measures aimed at decreasing the number of students needing or assigned to remedial courses.

26 Bettinger, E and Long, B (2009). Addressing the needs of unprepared students in higher education. *Journal of Human Resources*. Summer 2009, vol. 44, no.3, 736-771.

COLLEGE GRADUATION RATE

The metrics measure:	The percent of students graduating from two- and four-year colleges in 150% of the normal time to graduate.
Source of data:	National Center for Education Statistics; Southern Regional Education Board
Relevance to the pipeline:	Completing college is necessary for developing useful knowledge and skills, as well as earning a valued credential that can be marketed for higher-paying jobs.

Implication for the workforce: Graduation rates for public colleges located in Alabama are comparable to national and regional rates, but show that a large percentage of students are not graduating. Failure to graduate has costs for the student, taxpayers, and the workforce.

The state does not report data on the number and percent of college-going high school graduates from Alabama who complete their degrees. However, the state does provide data on the percent of undergraduates graduating from two and four-year colleges in Alabama. These data are shown in figures 26–31. The four-year college rate represents the percent of full-time students graduating within six years of initial enrollment. The two-year college rate represents the percent of full-time students graduating within three years of initial enrollment. The cohorts will include in and out-of-state students.

Figure 26. Graduation Rates in Alabama Two- and Four-Year Public Colleges, 2017

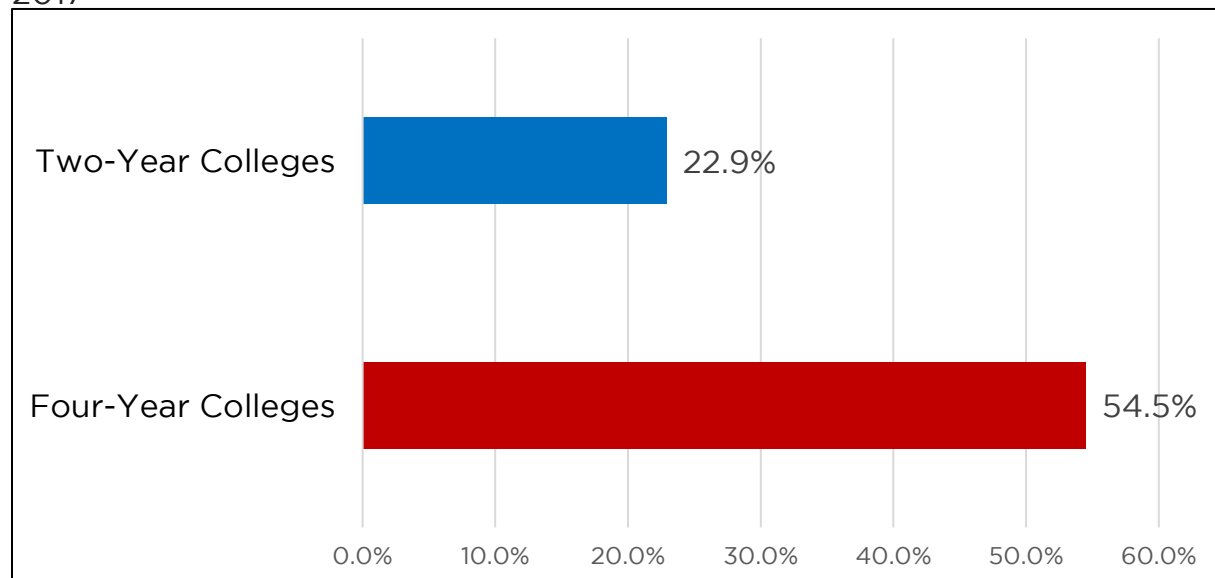
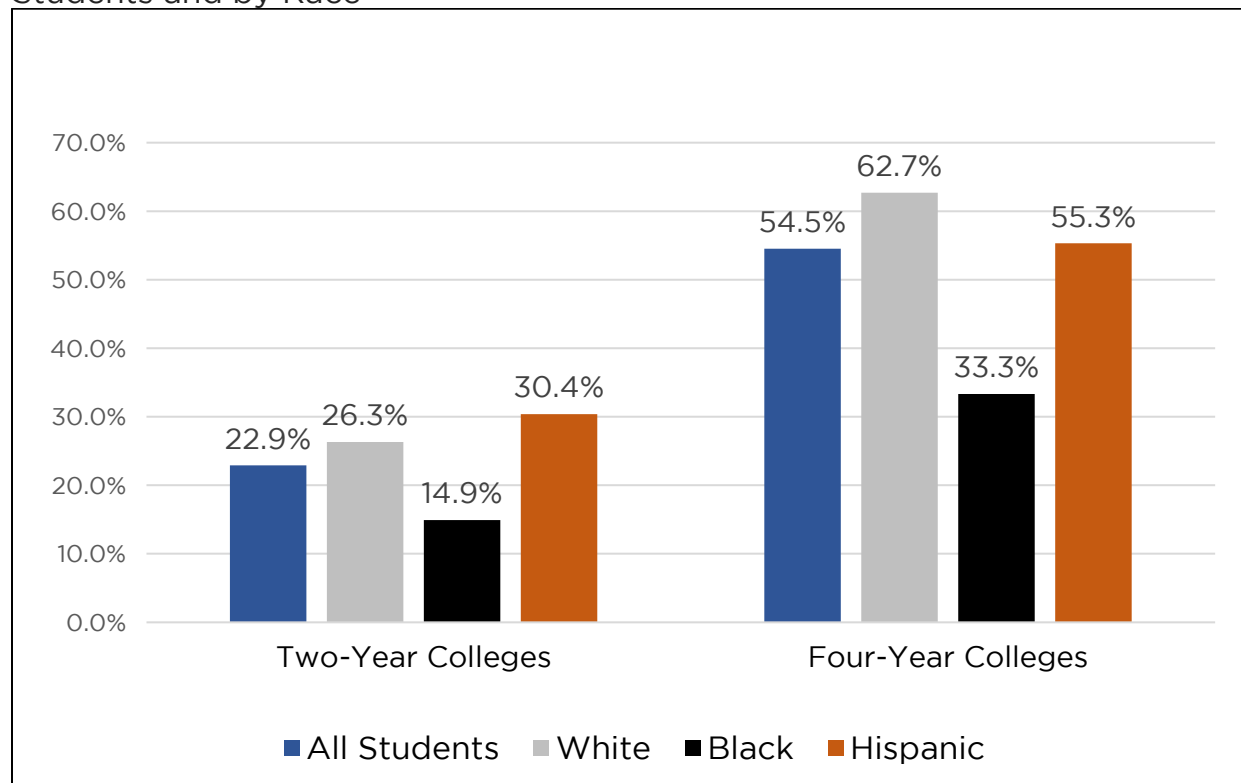


Figure 26 shows that 22.9% of students graduated from two-year colleges, and 54.5% graduated from four-year colleges. Statewide, more than half of students graduate from four-year colleges, but this varies by institution. Graduation from four-year colleges in the state is more than double the percent graduating from two-year colleges. This is not unique to Alabama and reflects differences in the nature of two- and four-year colleges. Community colleges have a long-standing tradition of open admissions designed to give students who are not college ready another chance to become college ready. Furthermore, students attend two-year colleges for a variety of reasons that may not involve goals for graduating. Some may enter with the intent to transfer to a four-year college after a year of study, or local commuters may enroll with the intent of taking a variety of courses they find useful or interesting.

Figure 27. Graduation Rates for Two- and Four-Year Colleges in Alabama: All Students and by Race



Differences in race show varying patterns by sector. Students who are Hispanic are graduating at a higher rate than other groups in the two-year colleges, although this is calculated from lower numbers of Hispanic students enrolled. The difference in graduation rates between black students and other groups is significant, especially in the four-year colleges.

Beyond race, research identifies other student characteristics that determine a student's chances of graduating²⁷:

- Parent's education and income
- Status as first-generation college student

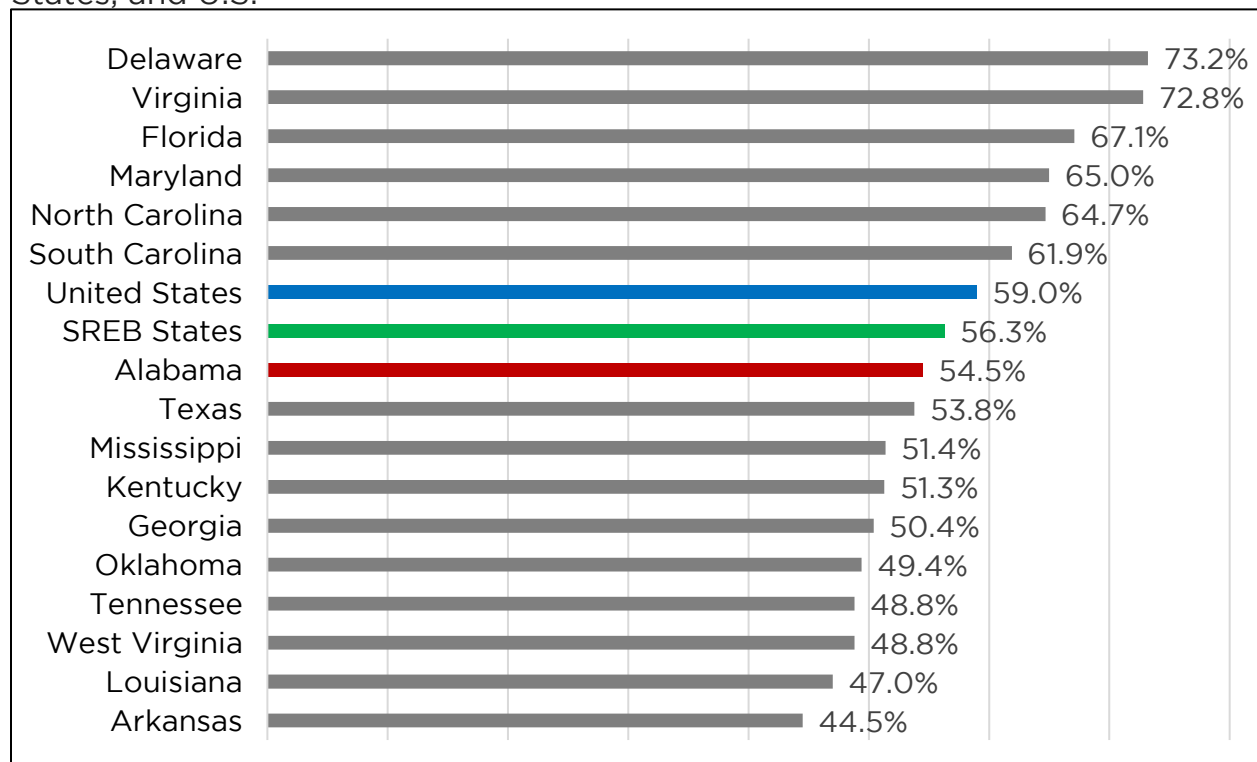
²⁷ Ober, D, Beekman, J., Pierce, R. (2018). Analyzing four-year public university and two-year college graduation rates. *Journal of Education and Training Studies*, 6, no. 4., 221-47, April 2018. See also Fain, P. (2013). Inputs trump outputs. *Inside Higher Ed*, August 1, 2013.

- SAT or ACT scores
- Quality of academic preparation for college
- Availability of financial resources to pay for college
- Social-emotional readiness for college

Institutional characteristics can also make a difference. Variation in academic quality and attention to student support in colleges can make a difference. Colleges with lower admissions standards have lower graduation rates. Institutions with higher percentages of Pell Grant recipients tend to have lower graduation rates.

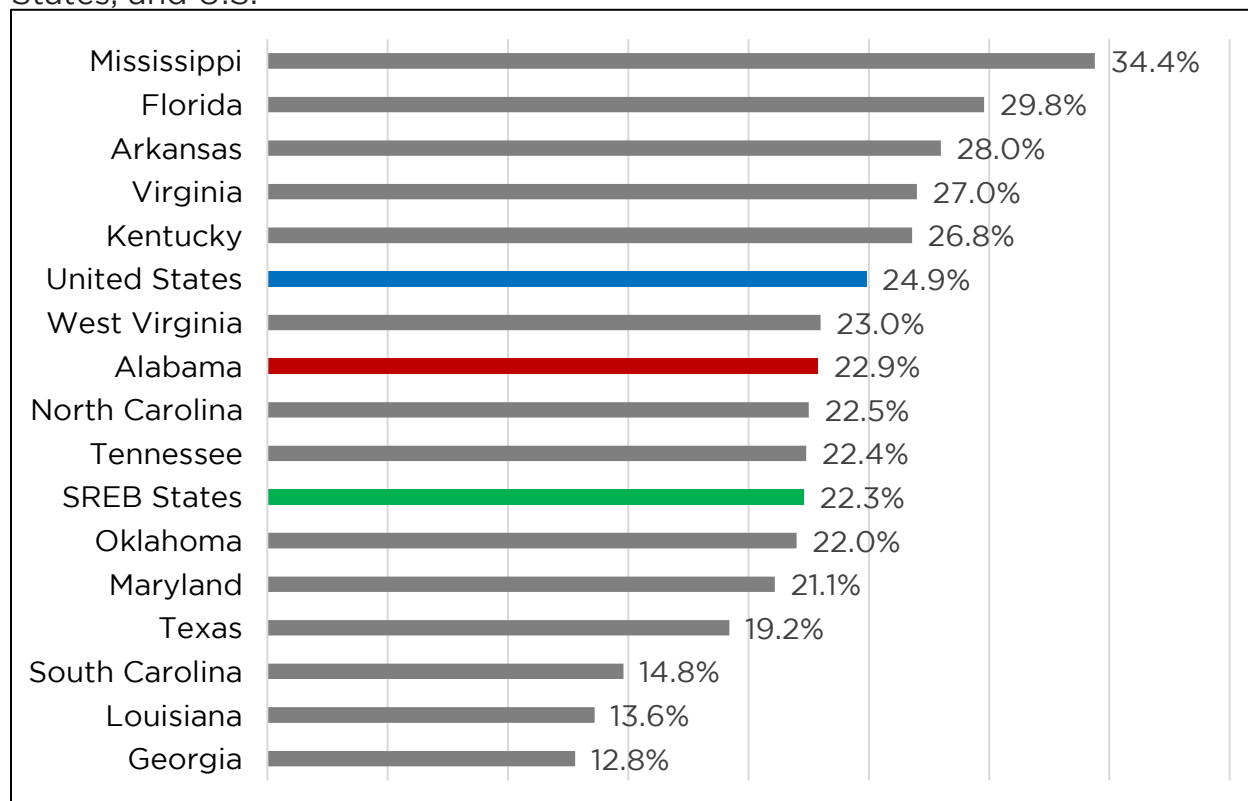
Figure 28 shows that Alabama's graduation rate among four-year colleges is below, but comparable, to the average across states in the Southern Regional Education Board (SREB) and the national average.

Figure 28. Graduation Rates for Public Four-Year Colleges in Alabama, SREB States, and U.S.



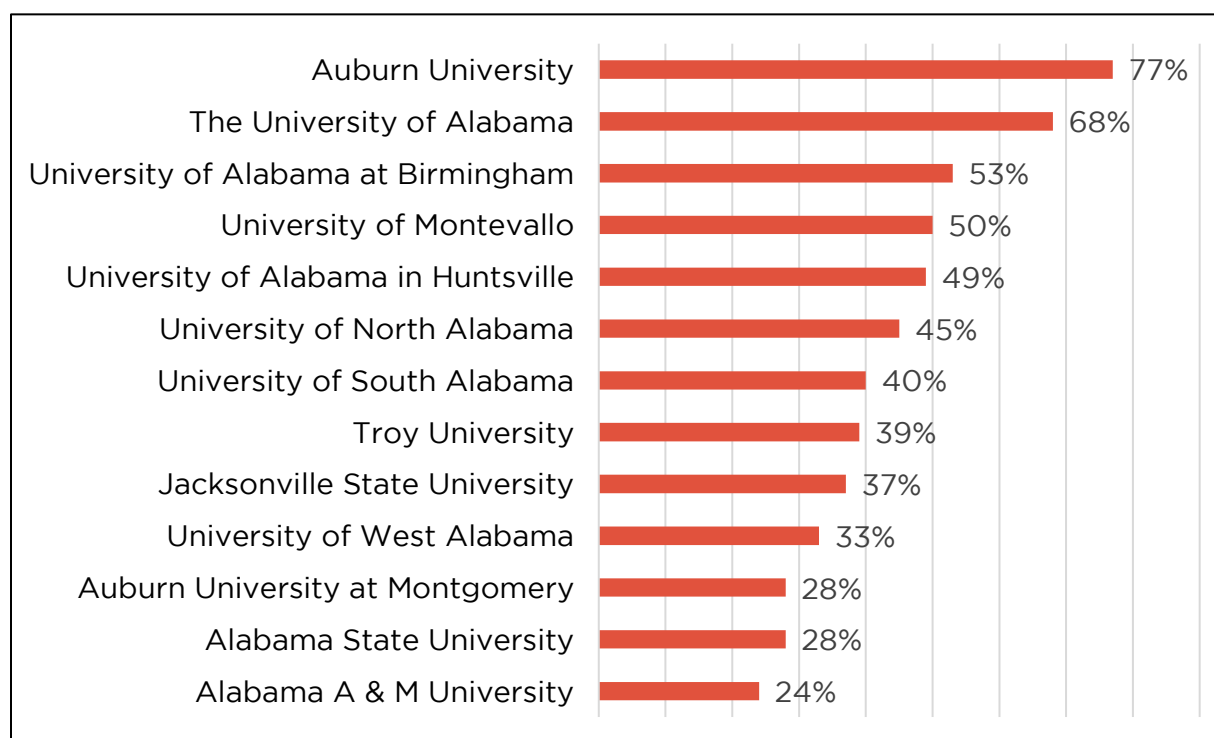
Some students who fail to graduate from a four-year institution may have been better served in a two-year college or CTE program.

Figure 29. Graduation Rates for Public Two-Year Colleges in Alabama, SREB States, and U.S.



For the two-year colleges, Alabama's graduation rate is also above but comparable to the SREB average. Graduation rates for both four-year and two-year colleges rank seventh among the SREB states.

Figure 30. Graduation Rates for Public Four-Year Institutions in Alabama



The differences shown among four-year institutions in Figure 30 closely align with differences in the percent of Pell Grant recipients and student ACT scores. Institutions have different missions. A more rigorous analysis would compare students with comparable characteristics at the different institutions or graduation rates among institutions with comparable characteristics. At the same time, the large percentage of students not completing college involves significant costs for students and taxpayers alike. Students who do not graduate experience costs in terms of lower average earnings, incurring student debt, and losing time while enrolled in school. It can be argued that when students drop out, the resources expended on their education from tax dollars were less efficiently invested.

Figure 31. Graduation Rates for Public Two-Year Institutes in Alabama

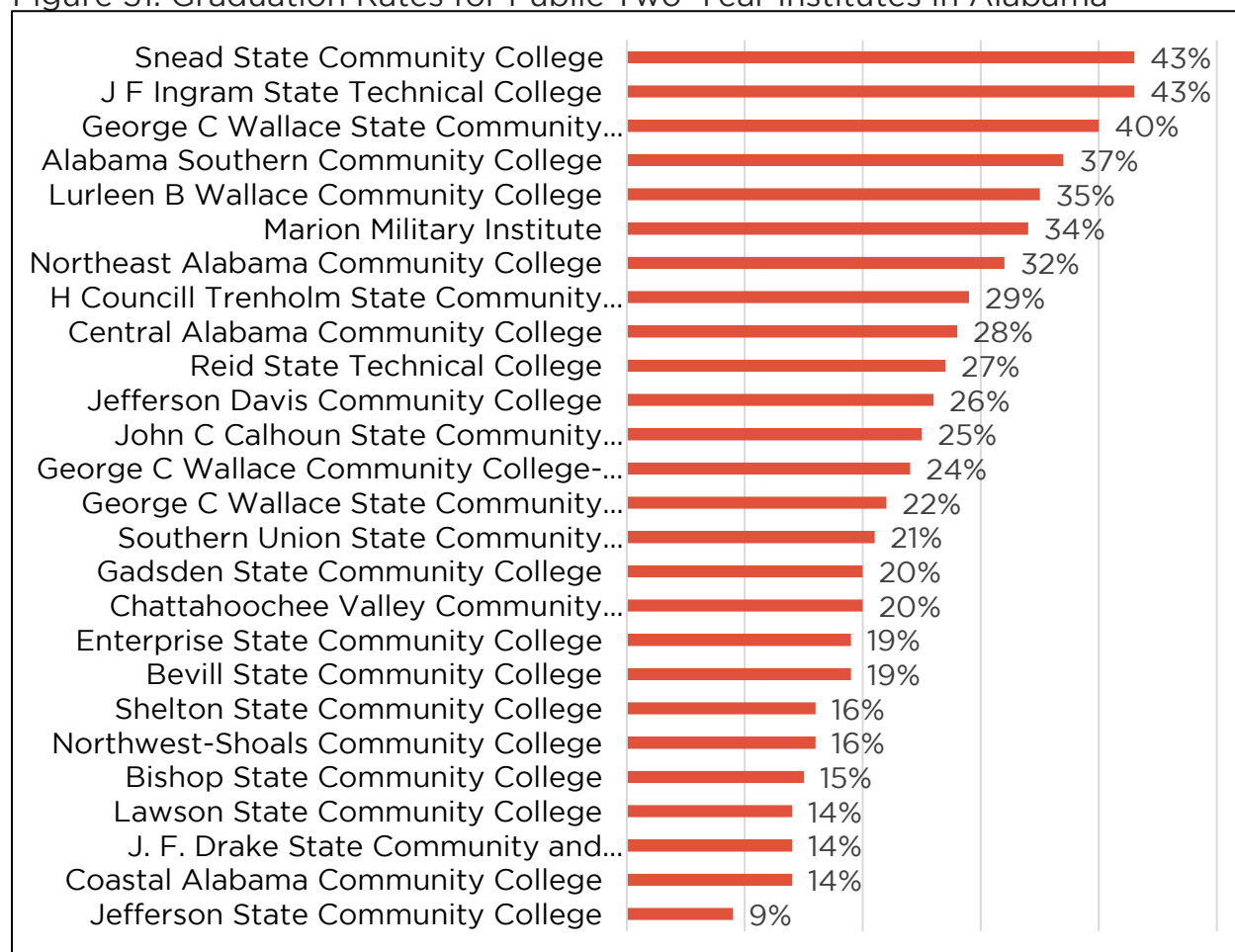
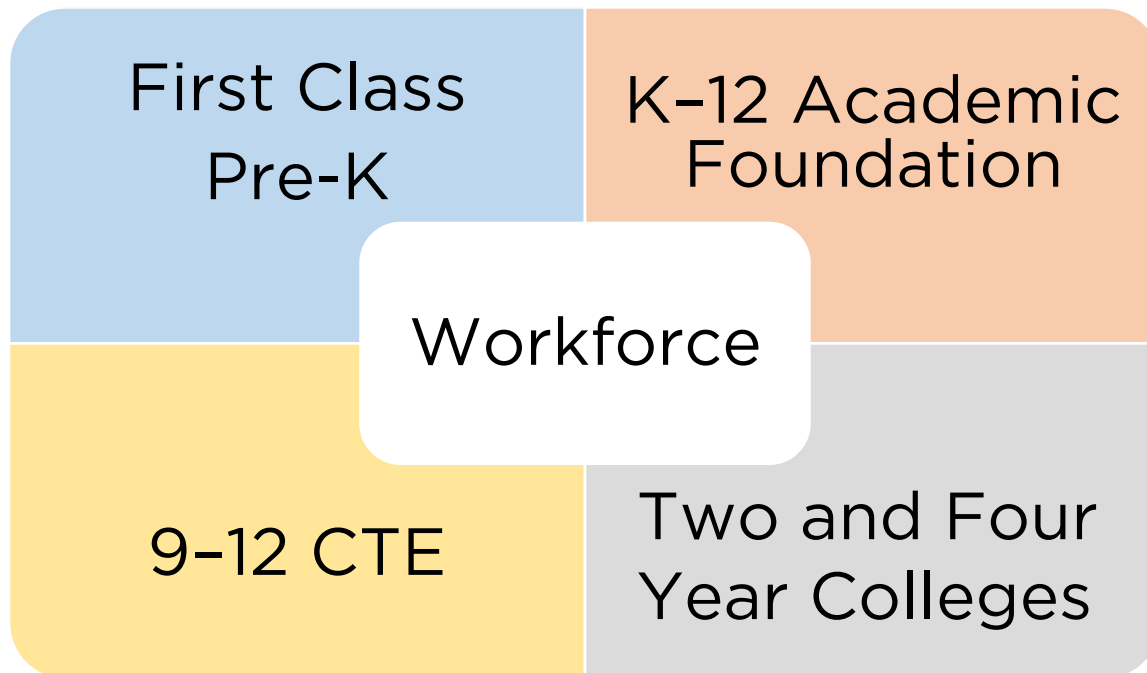


Figure 31 shows that the graduation rate at several of Alabama's two-year colleges exceeds the SREB average (22.3%) and national average (24.9%), while others are far below. Again, one of the missing factors in this analysis is the value added by institutions for comparable students.

The Education Pipeline: What Is Possible?



The above figures illustrate where Alabama public schools are making progress and where there is work to do. These metrics build on each other. Success at the end of the pipeline requires a strong foundation and steady progress throughout the education system.

The data suggest that, at best, Alabama's public education system can produce approximately 250,000 highly skilled workers between 2020 and 2025 and roughly 1 million over 20 years, the approximate time for pre-school students to reach age 25. This presumes every entering student graduates college and career ready and earns a high-value credential.

However, while progress is being made, there is room to improve. These improvements will strengthen the contribution of public education to the goal of 500,000 qualified workers by 2025.

The remainder of this report provides a closer look at Career Technical Education (CTE).

CAREER AND TECHNICAL EDUCATION

With the publication of *A Nation at Risk* in 1983, states embarked on reforms designed to improve public education and ensure opportunities for all students to learn at high levels. Embedded was the assumption that all students should be “college ready.” So, college preparation was the goal of K–12 education, with diminished emphasis on the training aspects that were once more prominent. However, in recent years, educators and policymakers have realized that a four-year degree is not the only option for students and is not always the best for every student. There is a renewed emphasis on career and technical training in high school.

Today, students do not have to wait until after high school to begin career training. Career training is offered by Alabama’s Career Technical Education (CTE) program.

CTE provides a broad array of career preparation and career readiness programs, projects, and courses offered at the secondary and postsecondary level. In many cases, postsecondary institutions provide CTE programs at high schools. CTE in secondary schools is designed to expose students to the world of work and a particular career path. CTE allows students to combine learning with real-world experiences and develop needed academic, technical, and employability skills. It is potentially one of the strongest strategies for addressing the increasing gap between the skills job applicants offer and the skills employers actually need. Research shows that struggling students who seriously pursue CTE are more likely to graduate, find gainful employment, and earn higher wages than comparable students who do not leverage these programs. These dividends are especially pronounced for students who take multiple CTE courses and concentrate in a particular field.²⁸

States and local systems have some flexibility with the design and implementation of CTE programs, but the broad outline of the program is specified in the federal Carl D. Perkins Career and Technical Education

28 Dougherty, S. (2016). Career and Technical Education in High School: Does It Improve Student Outcomes? Thomas Fordham Institute.

Improvement Act of 2006, which provides the legal, programmatic, and financial basis for CTE in the United States.

Recent iterations of the Perkins legislation have moved CTE programs away from isolated courses or purely vocational programs to concentrations and Career Pathways/Programs of Study with a career focus.

It cannot be emphasized enough that traditional college preparation and career technical training are not in opposition—and one is not superior to the other. Moreover, the state would benefit from increasing the number of motivated students in both paths.

Structure

While almost any non-traditional academic program could be colloquially referred to as a CTE program, there is an effort to coordinate, organize, and promote best practices in CTE. Foundational to this effort is the National Career Clusters Framework, which organizes CTE programs into 16 Career Clusters. Each Cluster is a group of similar occupations with industry-validated knowledge and skills statements that define what students need to know and be able to do in order to succeed in a chosen field. These Clusters are further broken out into 79 career pathways.

The term “career pathways” is defined in the federal Workforce Innovation and Opportunity Act (29 U.S.C. 3102) as:

“a combination of rigorous and high-quality education, training and other services that:

- align with the skill needs of industries in the local or state economy;
- prepare a student to be successful in secondary or postsecondary education options, including apprenticeships;
- include, as appropriate, education offered concurrently with and in the same context as workforce preparation activities and training for a specific occupation or occupational cluster;

- organize education, training, and other services to meet the particular needs of a student in a manner that accelerates their educational and career advancement;
- include counseling [and career coaching] to support an individual in achieving their education and career goals;
- enable the student to gain a secondary school diploma or its recognized equivalent, and at least 1 recognized postsecondary credential; and
- help the student enter or advance within a specific occupation or occupational cluster.”²⁹

Career Pathways outline sequences of academic, career, and technical courses and training that begin as early as ninth grade and lead to progressively higher levels of education and higher-skilled positions in specific industries or occupations.

The Clusters Framework has been adopted at both the secondary and postsecondary levels. It can be used as a guide for developing programs of study that bridge secondary and postsecondary systems and for creating individual student plans of study for a range of career options within a Cluster. Students learn about their interests and choose the educational pathway best suited for them. Table 1 lists the 16 Clusters.

²⁹ *Strengthening Career and Technical Education for the 21st Century Act (Perkins V). Guide for the Submission of State Plans.* US Department of Education, Office of Career, Technical, and Adult Education.

Table 1. The 16 Career Clusters

1. Agriculture, Food & Natural Resources	9. Hospitality & Tourism
2. Architecture & Construction	10. Human Services
3. Arts, A/V Technology & Communications	11. Information Technology
4. Business Management & Administration	12. Law, Public Safety, Corrections & Security
5. Education & Training	13. Manufacturing
6. Finance	14. Marketing
7. Government & Public Administration	15. Science, Technology, Engineering & Mathematics
8. Health Science	16. Transportation, Distribution & Logistics

Participation

All students in Alabama high schools are required to take at least one career preparation course. Students can take additional career courses, and some schools offer substantial CTE options, including academies in law or engineering, and the opportunity to train in nursing, firefighting, robotics, or culinary arts. Students who take at least two courses in a single career or technical program of study are designated as “CTE Concentrators.” In 2017–18, 176,618 Alabama public school students participated in CTE.³⁰

Credentials and High-Growth Fields

CTE credentials are meant to be stackable, industry-recognized, and in high-growth/high-demand fields. Generally, these credentials are an essential first step in a career path. While the majority of in-demand CTE related jobs

³⁰ Perkins Data Explorer, The Consolidated Annual Report (CAR) funded by the U.S. Department of Education/Office of Career, Technical, and Adult Education, <https://perkins.ed.gov/pims/DataExplorer/CTEParticipant>

require postsecondary training, a high school student can earn a certificate in a CTE field and, in some cases, enter work directly after high school.

Alabama is committed to increasing the number of students earning a recognized industry credential.

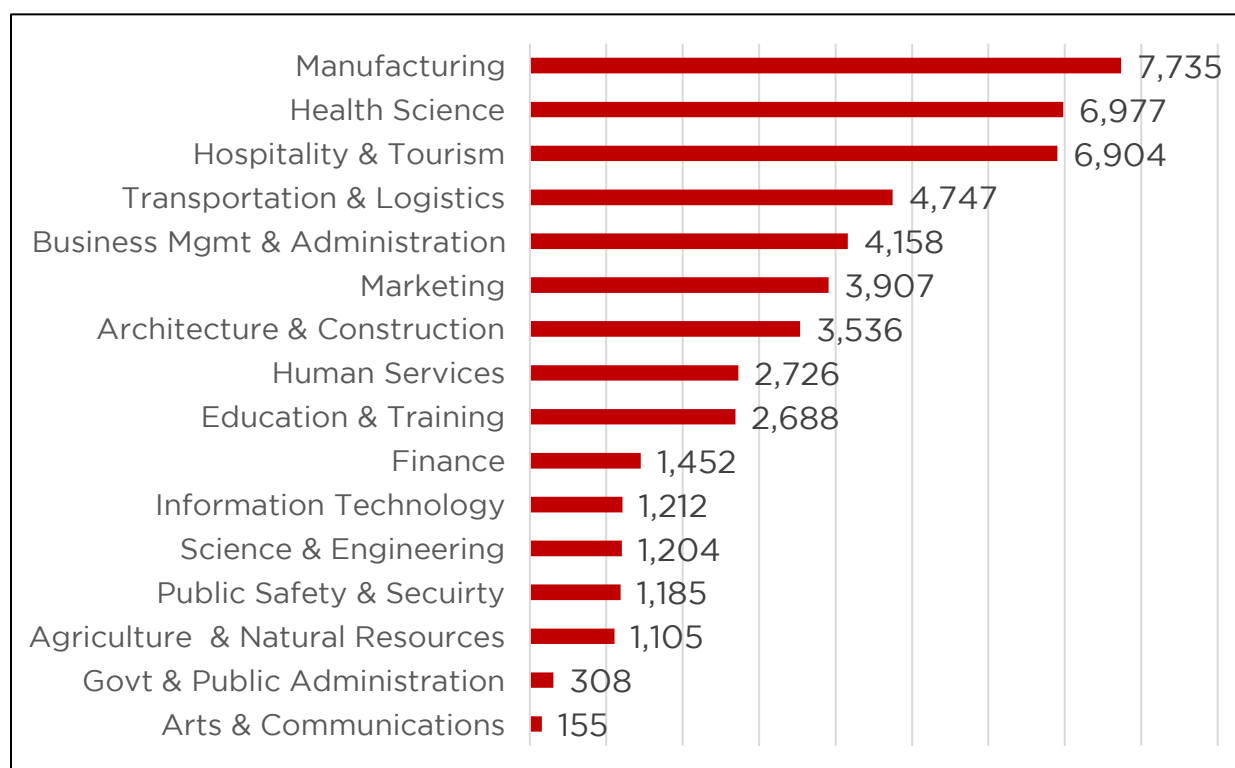
A CTE certificate is one of the seven metrics of the state's CCR measure. Thus, increasing the number of students earning a CTE certificate can increase the percentage of students deemed college and career ready, further reducing the gap between that measure and the graduation rate.

An industry-recognized credential can count toward the state's goal of 500,000 highly skilled workers and potentially places the student on a path to a career.

High-Growth Fields

One of the key issues referenced in this discussion, and especially relevant to workforce development, is the degree to which certificates are awarded in fields aligned with projected high-growth fields. Success Plus has set goals for the number of highly skilled workers needed by CTE Cluster for 2019–20, based on an analysis of data provided by the Alabama Department of Labor. These goals are listed below, considering factors such as average annual openings, openings related to workers exiting the field, openings, and projected growth to the year 2026.

Figure 32. Number of High Skilled Workers Needed, 2019–20



Alabama Department of Labor, Labor Market Information Division, 2016-2026 occupational projections

These data can be adjusted for jobs that require varying levels of education. In looking at in-demand jobs by region, the vast majority require some level of postsecondary training, usually at a two-year college. Manufacturing, transportation, hospitality, and construction are clusters with several “hot jobs” that do not require a postsecondary certificate or degree. In contrast, nearly all in-demand jobs in health science and information technology have expectations for some level of postsecondary training. Regardless, all students can benefit from postsecondary education and training, whether occurring in two-year and four-year colleges, through apprenticeships, AIDT, other state services, or corporate training institutes.

As more and more Alabama students earn credentials in high school, it is important that these credentials are earned through programs characterized by high quality, rigor, and alignment with market needs in the state.

A review of data is needed to determine if this is occurring.

To study secondary credentialing in Alabama, data were collected on the number of certificates awarded from the Alabama State Department of Education for the years 2016–18. Interactive data dashboards are accessible via the BEA at beaalabama.org and PARCA at parcalabama.org.

An important caveat about the numbers: The data reports how many certificates were earned, not how many students earned certificates. Some students may have earned more than one certificate.

This analysis unfolds in Figures 33, 34, 35, and 36. These figures highlight certifications from different perspectives.

Figure 33. CTE Certifications in Alabama Public High Schools, 2016–18

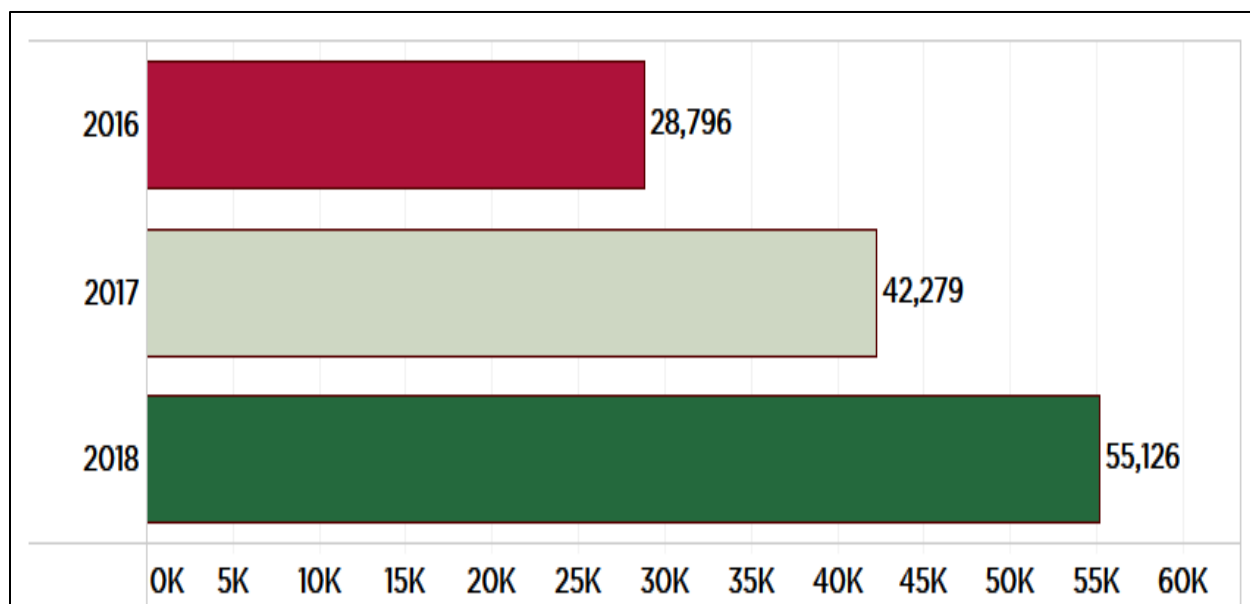
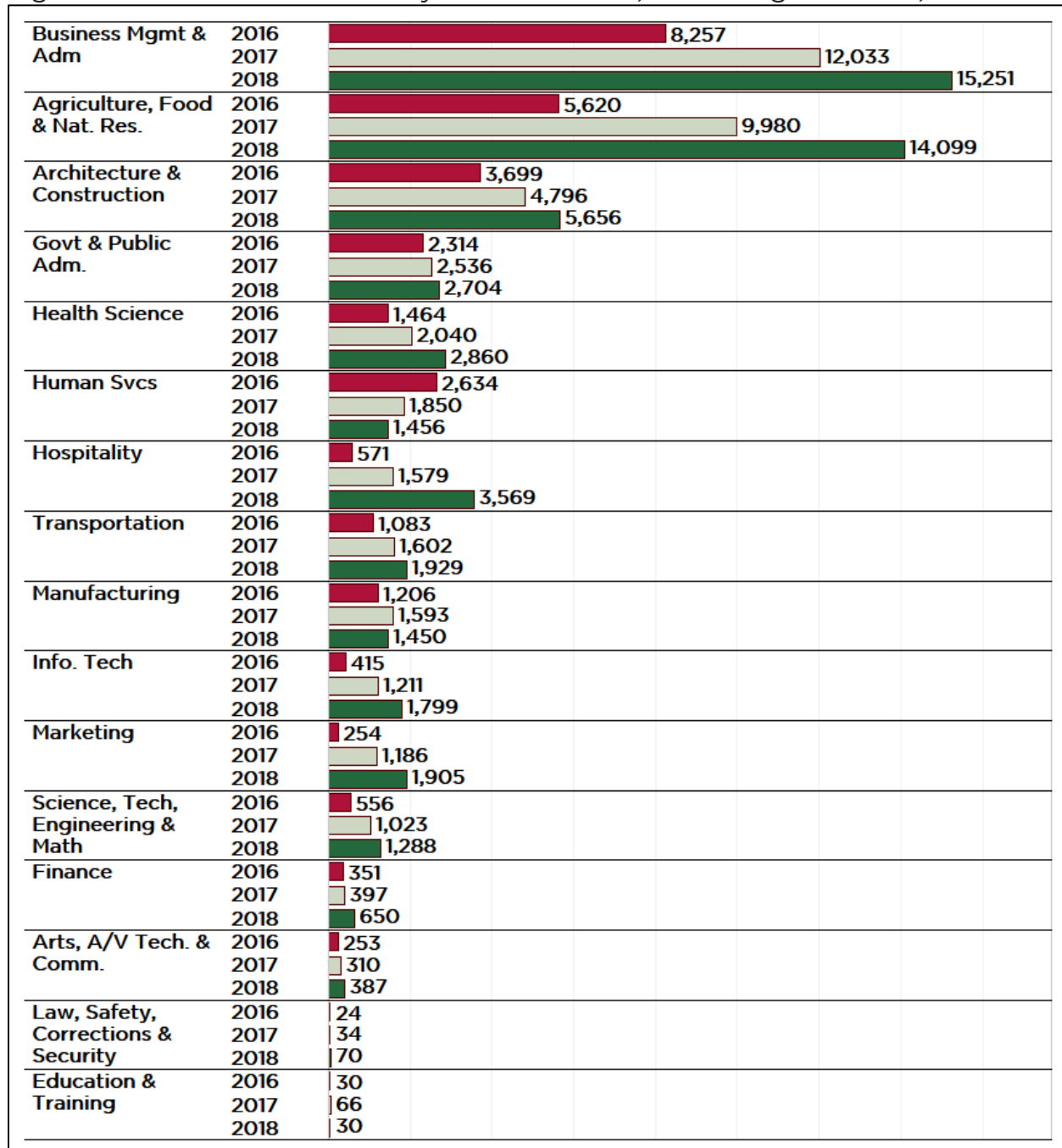


Figure 33 shows positive growth in CTE certifications, nearly doubling over this period.

Figure 34, reporting certifications by cluster, shows particular clusters are very healthy and growing by large amounts, especially in business management services and agriculture. Certifications in hospitality and tourism are also growing at a high rate. Unfortunately, certifications in Alabama's

number one high-growth field, manufacturing, had limited and inadequate growth.

Figure 34. CTE Certifications by Career Cluster, Public High Schools, 2016-18



While the clusters showing growth in Figure 34 make sense, there is evidence of misalignment with projected needs in the state when looking at the specific certifications.³¹

First, nearly half of the certificates issued in Agriculture were in Beef Quality Assurance for which there may be a limited number of jobs in the state, and the vast majority of certificates in Business Management were in Microsoft Office skills. Furthermore, from all reports, manufacturing is the state's top high-growth field, but one of the few clusters that showed very limited growth. Manufacturing is projected to be the highest growing field for CTE-related jobs that would require only a high school degree. Advanced manufacturing occupations require postsecondary education, and this is where Alabama's economy is moving. CTE programs in manufacturing are more common at the postsecondary level, although students should be able to enter manufacturing as skilled workers through high school CTE training.

The only cluster to decrease was Human Resources, which also shows positive signs for growth.

Figure 35 identifies specific certifications with the highest growth over the three years. It reveals that the certification growth occurring in agriculture, business, and hospitality are in specific certifications that either does not represent high growth career pathways or lacks sufficient rigor to merit college and career readiness. The remarkable growth occurring in these certifications raises questions about the integrity of the methods for identifying students as college and career ready in the state.

Some of these increases appear to be happening in the health sciences and information systems, where job demand is high. Others raise concerns.

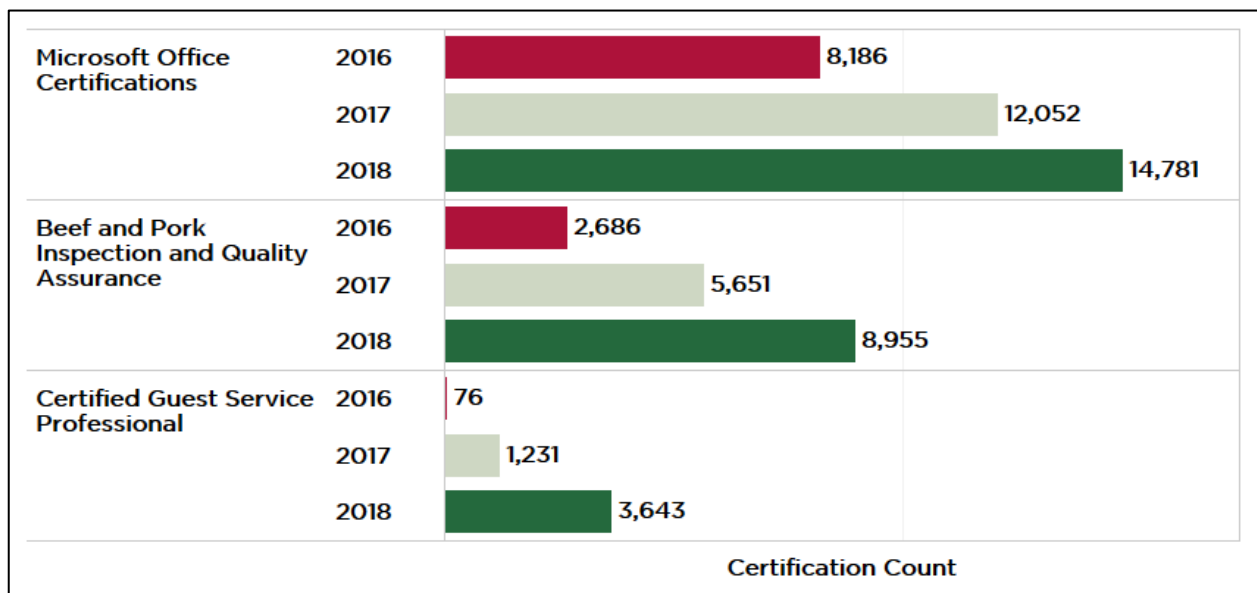
³¹ See Alabama Department of Labor website: www2.labor.alabama.gov/workforceDev/.

Between 2016 and 2018:

- Certificates awarded in Adult Beef Inspection increased from 93 to 7,221. When Beef and Pork Inspection are combined, these certificates increased from 2,686 to 8,955.
- Certificates in Microsoft Office increased from 8,186 to 14,781.
- Guest Service Professional certificates increased from 76 to 3,643.

In 2018, 27,379 certificates were awarded in Microsoft Office related skills, beef and pork quality assurance, and hospitality services, close to half of all CTE certificates awarded. These numbers far exceed expectations for jobs in these fields.

Figure 35. CTE Fields with the Largest Increases in Certifications, 2016–18



Microsoft Office

In 2018, 14,781 Microsoft Office-related certificates were awarded to Alabama students. This is a significant increase in skill packages that are highly valued in the workplace. These skills can potentially strengthen a student's competency in graphic literacy as measured by WorkKeys. Though office workers often learn these skills on the job, they are essential in many careers, and certification enables students to enter jobs knowing how to get the most out of specific applications. It might be prudent to train and certify all students in Microsoft Office. Still, questions are raised about whether or not these skills represent a career pathway that qualifies students as college and career ready.

Beef and Pork Quality Assurance

In 2018, 8,955 beef and pork quality assurance certificates were awarded to Alabama students. Beef and pork inspector certificates require that students sit for three online training modules that can be delivered in person or online. Each module lasts for two hours. Students gain basic knowledge about cattle and beef inspection, but may not gain hands-on experience.

Beef Quality Assurance, where the largest increase is occurring, is a "...nationally coordinated, state-implemented program that provides systematic information to U.S. beef producers and beef consumers of how common sense husbandry techniques can be coupled with accepted scientific knowledge to raise cattle under optimum management and environmental conditions."³²

Certification does not appear to be designed to prepare students for jobs, but rather to enhance knowledge among producers and others in the field regarding best practices that can improve beef quality and health. This certificate may be useful to high school students living with families engaged in the beef and pork industries.

³² www.bqa.org

Hospitality

In 2018, 3,643 Certified Guest Service Professional certificates were awarded to Alabama students. Hospitality is a high-demand field in Baldwin County and the coastal areas near Mobile, and Success Plus projects it to be a high-growth field for the state. However, according to community leaders representing hospitality in the Mobile area, the Certified Guest Service Professional Certificate is not part of a rigorous program of study that prepares students for a career in the field.

There are three distinct issues that raise concern: lack of sufficient rigor to earn a certificate, lack of alignment with state needs, and status as a marker of college and career readiness.

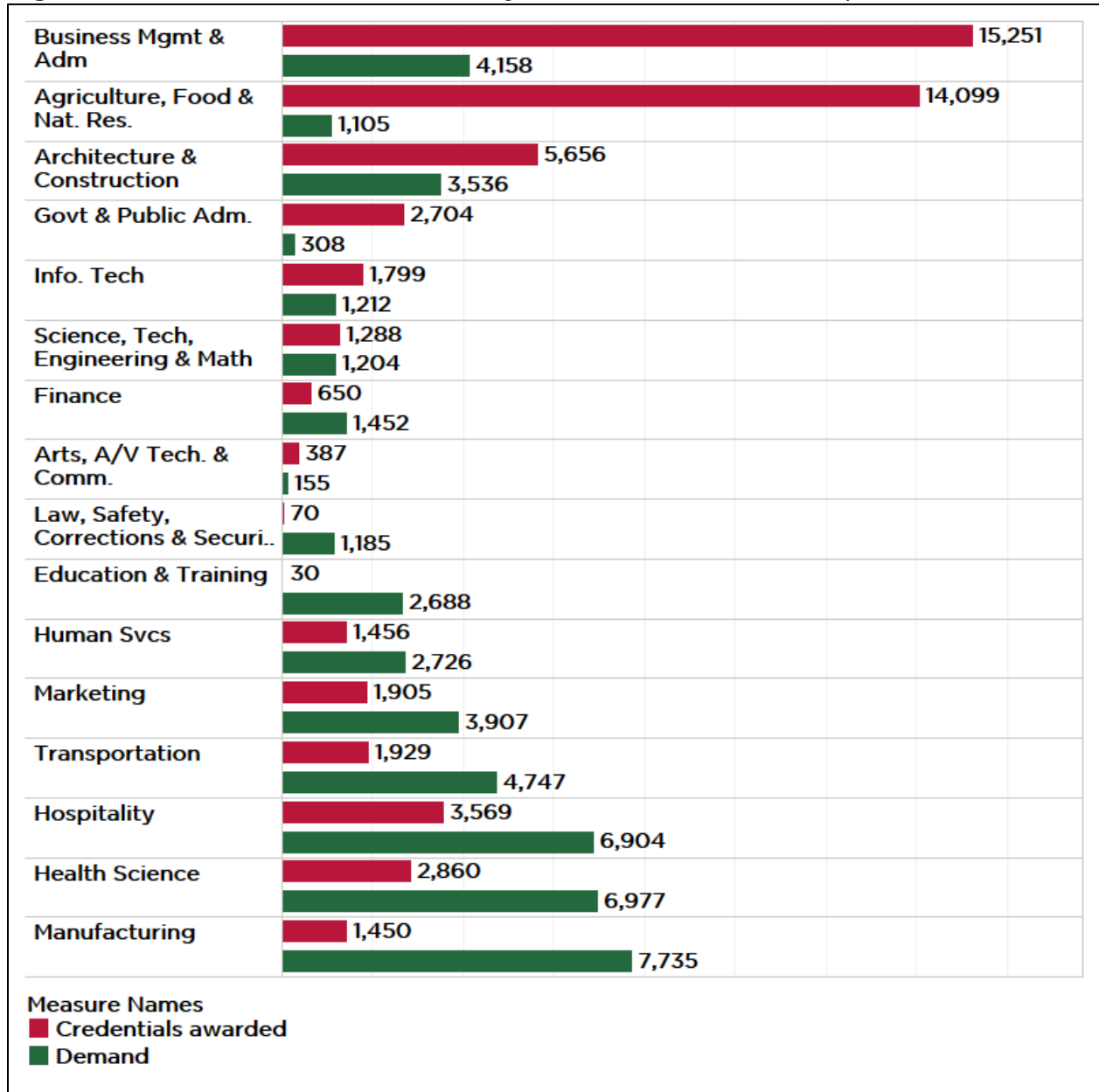
These findings seem to suggest that students are enrolling in less rigorous certificate programs in order to earn a credential that counts them as college and career ready. The CCR metric counts as part of a school's overall grade in the state report card.

Counting these certificates can aid high schools in attempting to meet the CCR metric and raise their score on the state's report card. However, as the state strives to meet the goal of 500,000 highly skilled workers, does it jeopardize the legitimacy of gains without addressing the education and workforce needs that make these goals necessary?

Aligning CTE with Workforce Needs

Finally, the Clusters with the highest number of CTE certificates earned are not the Clusters with the highest labor market projections (Alabama Department of Labor). Figure 36 compares projected needs with certifications by Cluster.

Figure 36. 2018 CTE Certifications by Cluster vs. 2020 Anticipated Demand



Sharp misalignment occurs in many fields from either the supply side (certificates exceeding demand) or the demand side (too few certificates to meet demand). Consistent with the previous discussion, Agriculture-related certificates are far exceeding demand. While Business Management is also substantially exceeding demand, this appears to be primarily because of

Microsoft Office certificates. There may be other needs in business that are not being met. In a number of fields, most notably Manufacturing, Health Science, and Hospitality, the number of certificates is falling far short of needs.

It is important to recognize that high school CTE programs are not expected to fill all the jobs needed in various high-demand fields. Programs in colleges, apprenticeships, and industry training play key roles, and for more advanced jobs, postsecondary training is critical. At the same time, these comparisons raise important questions the state needs to address in better aligning certificate production and state needs.

Leaders from across the state in business, government, and education are calling for greater alignment of CTE credentials and workforce needs. In turn, employers need to be able to trust that job candidates with particular credentials have specific skills and competencies.

Why Does This Matter?

The above data documents the explosive growth of certifications awarded to high school students in particular fields, which contribute to growth in the state's CCR rate. The goal of the CCR metric is to document the value of Alabama's high school diploma and measure progress in preparing students for college and career.

If CTE credentials, the fastest growing component of the CCR metric, are not rigorous, the validity of the CCR metric is in danger.

School systems and state policymakers can find creative ways to meet the CCR goal, as well as the Success Plus goal of 500,000 workers, but are they highly skilled workers? If the underlying education and training are not rigorous and relevant to the needs of the state and its industries, Alabama will still not produce a generation of citizens able to compete in the wider marketplace, and the state will not be able to honor its workforce commitments.

The validity of CTE certificates—and all metrics of education and work-readiness—are vital to the long-term economic vitality of Alabama and the quality of life of its people.

Alabama Committee on Credentialing and Career Pathways

The Governor’s Office of Education and Workforce Transformation (GOEWT) partnered with education and workforce stakeholders to develop the Alabama Committee on Credentialing and Career Pathways (ACCCP),³³ designed to strengthen quality assurance of non-degree credentials, which includes CTE certificates. The ACCCP was codified in Act 2019-506 during the 2019 session, and is co-chaired by the Superintendent of Education and Chancellor of the Department of Postsecondary Education and Alabama Community College System. ACCCP is supported by 16 advisory committees aligned with the CTE Clusters.

The structure of the Committee, consisting of K-12 and postsecondary education, and supported by advisory groups representing Career Clusters and industries, provides a strong basis for collaboration and joint planning that should benefit students and economic development.

The Committee will annually identify a regional and statewide list of in-demand mid-level occupations, paying high to moderate wages that require a postsecondary credential. Listed occupations must be part of a Career Cluster. This will support CTE program planning and provide guidance to students and adults who are seeking training in high-demand fields. This requires strong collaboration between the state, industry, and education.

The Committee will further create an annual compendium of valued credentials to guide students, prospective adult workers, and CTE program planning. This will include high school CTE certificates that meet particular criteria. High-quality credentials will be characterized by:

³³ *ACCCP and TAC Handbook*. 2019. State of Alabama, Office of the Governor.

- Substantial job opportunities,
- Transparent evidence of competencies mastered by credential holders,
- Evidence of increased employment opportunities and earnings as a result of obtaining the credential,
- “Stackability” with other credentials that can be pursued as part of a career pathway.

The Committee, working with industry leaders and experts in education and specific Career Clusters, will develop a sequence of stackable credentials with specific competencies for progressing along a career pathway. A taxonomy of competencies (knowledge and skills) will be developed for credentials and for occupations. Ideally, when an industry posts a need for an occupation, job seekers and CTE students will be able to identify the competencies needed. In turn, as students and adult job seekers apply for jobs, their credentials will be aligned with particular competencies, creating clear signaling between job seekers and employers looking for workers.

While this is especially relevant to counting individuals as part of the 500,000 highly skilled workers, it does not affect the state’s CCR measure. Local school systems will be encouraged but not mandated to enroll CTE students in certificate programs approved by the ACCCP. Students awarded certificates in less rigorous fields with low job prospects that are not part of a career path will continue to be counted as college and career ready. Additional action is still needed to ensure students officially become CCR only by participating in an approved high-quality program. A disconnect between CCR metrics and the Committee’s list of valued credentials could weaken the credentialing process.

Common Principles of Quality

Consistent with this initiative, leaders across the nation have been calling for dissemination of a common set of principles that constitute high-quality CTE.

In 2018, the Association for Career and Technical Education published a much-heralded Quality Framework³⁴ as part of their High-quality CTE Initiative—an initiative designed to answer the question, “What is high-quality CTE?” This research identified a comprehensive, research-based framework of 12 elements of a high-quality CTE program of study. The framework is designed to apply to individual, local CTE programs spanning secondary and postsecondary education. In conjunction with the ACCCP, this is a tool Alabama can use in planning for the future of CTE in the state’s local schools and as a basis for addressing concerns raised in this report.

The framework consists of 12 elements and 92 criteria, which can be found in Appendix C.

³⁴ See <https://www.acteonline.org/wp-content/uploads/2019/01/HighQualityCTEFramework2018.pdf>.

OPPORTUNITIES

Alabama's education-workforce pipeline is now more integrated than at any point in the state's history. However, there are still areas for improvement, either in expanding current practices or learning from national best practices and the successes of other states.

This section highlights opportunities for the state to improve the education-workforce pipeline, specifically related to college and career readiness and CTE credentials. Long-term improvement, however, will require a new commitment to data and transparency.

An Opportunity to Produce Meaningful Data

Policymakers, educators, and researchers continue to struggle in the absence of a robust longitudinal data system, often called a P20-W database. Alabama is one of only 10 states without some form of this tool. Sixteen states and the District of Columbia have a full system that captures data across all four core agencies: early learning, K-12, postsecondary, and the workforce. Another 24 states connect data between at least two of the agencies.

Without the ability to accurately match K-12, postsecondary, and workforce data, accurate measurement and honest evaluation are very difficult.

Alabama's planned longitudinal database continues to be delayed, while at the same time, shrinking in robustness. While there are technical challenges, the primary obstacles are political—and the state's longstanding resistance to data transparency. While the lack of transparency satisfies some, it is not in the best interest of the economy, the workforce, or the Alabamians served by the state.

A well-developed longitudinal data system can support policymaking that enhances strategic and timely decisions about improving education and workforce development. A state system can capture data on students from one grade to the next, and alert state and local leaders to students who are at risk of failing. The data systems can help identify teachers who are succeeding

and those who are struggling. It can further strengthen learning, problem-solving, and collaboration among teachers, parents, counselors, and community resources.

A longitudinal data system will also strengthen workforce development by improving the alignment of the education systems and workforce.

An Opportunity to Evaluate Alabama's CCR Measure

As discussed earlier, Alabama's CCR measure is a component metric. Students who successfully achieve at least one of seven indicators are deemed college and career ready.

Authentic college and career readiness requires a solid foundation in English, reading, and math, applied cognitive skills, soft skills, and occupation-specific skills. Does the current CCR metric accurately reflect these skills?

A benchmark score in one ACT section or one AP or IB test may not demonstrate a broad academic foundation. Some CTE certifications, while useful, do not prepare the student for a career.

Alabama should implement a plan for continuous review and improvement to the CCR measure. Possible improvements include:

- Requiring benchmark scores on English, math, and reading ACT subject tests.
- Reporting the percent of students completing a college prep course of study that includes three or more years of traditional mathematics

CCR Component Measures

1. Earn a benchmark score in at least one subject on the ACT exam.
2. Score at the Silver level or above on the WorkKeys Assessment.
3. Earn a qualifying score on an Advanced Placement exam.
4. Earn a qualifying score on an International Baccalaureate exam.
5. Earn an approved industry credential through Career Technical Education.
6. Earn dual enrollment credit through an Alabama college or university.
7. Enlist in the military.

courses (e.g., two years of algebra and one year of geometry) or applied/technical courses with rigorous embedded mathematics and four years of grade-level English).

- Limiting CTE certifications counted as CCR in the state Report Card to state (ACCCP) approved certifications/credentials that meet criteria related to career opportunities, transparent competencies, and part of a program of study—career pathway, stackable credentials.

The above proposals would increase the rigor and the authenticity of the CCR measure. To compensate, the value of the CCR measure in the State Report Card could be increased.

An Opportunity to Create High-Quality CTE Programs

CTE is moving from the traditional courses in “shop” that were often isolated from other programs and, in effect, separated students into academic and non-academic tracks. Such thinking does not reflect the modern economy or the modern workplace. Nor does such thinking reflect CTE in Alabama. However, there is still room for improvement.

Connect CTE Certificates to CTE Programs of Study Aligned with a Career Pathway

Alabama could consider connecting CTE credentials to formal CTE Programs of Study.

A Program of Study (POS) seeks to align high school and postsecondary education with the demands of a changing economy and provide a more coherent career pathway for students. A robust POS is shaped by labor market demands, emphasizes alignment of secondary and postsecondary curricula, and provides opportunities for career exploration.

A POS is a “coordinated, non-duplicative sequence of academic and technical content...that incorporates challenging, state-identified academic standards; addresses academic and technical knowledge, as well as employability skills; is aligned to the needs of industries in the state, region, Tribal community or

local area; progresses in content specificity; has multiple entry and exit points that allow for credentialing; and culminates in the attainment of a recognized postsecondary credential.”³⁵

The U.S. Department of Education’s Office of Career, Technical and Adult Education collaborated with experts and organizations across the nation to design guiding principles for a Program of Study.³⁶ The guiding principles framework provides that effective state policies should ensure all students have an opportunity to participate in a POS and should require middle and high school students to develop an individual graduation or career plan aligned with their POS. The state should further support alignment of curriculum from grade to grade (9–12) and from secondary to postsecondary education. Well-developed course sequences should outline recommended academic and career and technical courses in each POS.

Researchers at the National Center for Career and Technical Education conducted a mixed methods longitudinal study of mature, POS-like programs at three community colleges and their feeder high schools.³⁷ They found that POS development is complex and challenging to implement but produces positive outcomes. The researchers identified four major findings.

First, the majority of students reported that participation in a POS motivated them to stay in school and better prepared them to make choices about college and career.

Second, the number of POS courses taken in high school was significantly related to staying in the same career cluster in college and to earning a college credential, though students did not necessarily stay in the same POS in college that they were part of in high school.

³⁵ See <https://careertech.org/programs-study>.

³⁶ See <https://cte.ed.gov/initiatives/octaes-programs-of-study-design-framework>.

³⁷ Alfeld, C and Bhattachacharya, S. (2013). *Mature Programs of Study: Examining Policy Implementation*. Louisville, KY: National Center for Career and Technical Education, University of Louisville.

Third, the POS facilitated a more seamless transition from high school to college.

Fourth, building strong partnerships between high schools and colleges was critical to success.

Integrate Academic and Applied Content in CTE Programs of Study

As schools embrace CTE as an attractive option for students, it is important not to fall into old practices of exclusively tracking students into college prep or career CTE prep paths.

Students are now choosing to pursue routes to their future that are not necessarily confined to one track or the other. Schools should provide options for students. Consistent with this trend, Perkins legislation is increasingly placing more emphasis on academic learning as well as skills specific to a particular career.

Perkins requires the integration of rigorous and challenging academic and career and technical education in POS/career pathways. Models of excellence have emerged that show how math, reading/literacy, and science can be taught as applied knowledge in career academies and CTE courses with positive results.

Students can learn math, science, and reading through applications in their CTE courses, and the reverse is true—they can apply what they learned in academic classes to their CTE projects. In the Pike County School System, STEM Academy students apply classroom learning to hands-on projects, like building and launching rockets.

The National Research Center for Career and Technical Education's (NRCCTE) curriculum integration models implement a contextualized approach to integration focused on CTE content. This does not require any sacrifice of CTE content or forced stand-alone academic content side by side with CTE content. It is authentic integration.

Math-in-CTE

NRCCTE commissioned an evaluation of its Math-in-CTE model.³⁸ The study used group randomization techniques to test CTE students' mathematical understanding after completing an integrated course compared to matching students who did not take the course.

The study included nearly 3,000 students and 200 teachers in nine states. Each of the CTE teachers participating in the study was paired with a math teacher from his or her local school, district, or community. The CTE-math teacher teams were brought together for professional development to learn the process and instructional methods of the Math-in-CTE model. The teams began the process by examining their CTE curricula in order to identify embedded mathematical concepts, a process known as curriculum mapping.

After one year, students in the classrooms of teachers trained in the Math-in-CTE model significantly outperformed CTE students who received the regular CTE curriculum. Student math skills improved without loss of CTE technical skills.

Reading/Literacy-in-CTE

Based on the successful Math-in-CTE curriculum integration study, the Literacy-in-CTE study sought to determine the impact of literacy strategies applied to CTE content on reading comprehension, vocabulary development, and motivation to read for students enrolled in CTE courses.³⁹

In developing the Literacy-in-CTE curriculum integration study, researchers at Cornell University tested two approaches to integrating literacy skills in CTE. Results were significantly positive for both approaches, but the approach that

38 Stone, J., Alfeld, C., and Pearson, D. (2008). Rigor and relevance: Testing a model of enhanced math learning in career and technical education. *American Educational Research Journal*, 45(3), 767-795.

39 Park, T. (2012). *Authentic Literacy Applications in CTE: Helping All Students Learn*. Louisville, KY: National Center for Career and Technical Education, University of Louisville.

used authentic CTE texts, texts aligned with CTE curricula, and implemented specific reading strategies did more to improve students' reading comprehension and vocabulary and increase literacy in high school CTE classrooms. The Literacy-in-CTE approach to instruction also made it easier for students to leverage reading strategies to more effectively understand CTE technical jargon. Student performance did vary based on how comfortable faculty were in teaching reading strategies, although students of teachers who participated in two years of professional development outperformed all groups.⁴⁰

Enhance K-12/Postsecondary Collaboration

Many Americans believe high schools have the responsibility for career preparation and that students should be capable of entering the workforce as highly skilled workers directly after high school. High school students can benefit from taking CTE courses and participating in programs offered at the postsecondary level while they are in high school. Furthermore, high school CTE can be the start of a career along a career pathway that involves earning a credential and degree in postsecondary education.

Several connections between CTE in high school and postsecondary education lay the groundwork for future collaboration. The ACCCP is a critical step forward that could be expanded from lists of occupations and valued credentials to wider coordination, supporting faculty collaboration and policy recommendations. CTE spans secondary and postsecondary education with the same organizing structure of 16 Career Clusters, which provides a basis for designing programs of study with stackable credentials coherently cutting across K-12 and higher education. CTE is funded by the same federal funding source and, in Alabama, secondary CTE programs are sometimes funded from the Alabama Community College System (ACCS).

40 Park, T. (2012). *Authentic Literacy Applications in CTE: Helping All Students Learn*. Louisville, KY: National Center for Career and Technical Education, University of Louisville.

Formal coordination is essential so that students can pursue a coherent CTE Program of Study that builds on the strengths of both sectors of education and is seamlessly integrated through common partnerships with employers and industries.

Collaboration: An Alabama Example

In cooperation with partners in higher education and industry, the Pike County School System is leading a movement to reinvent high school, erasing the traditional boundaries that separate high school and higher education, using dual enrollment and career tech offerings to give students a head start on the next level of education.

A visiting delegation from the National Assessment Governing Board took flight in planes piloted by students in Pike County's flight training program. They watched students operate a robotic system for planting and irrigation at the county's Agriscience Technology Center and visited a full-service bank branch at Pike County High School staffed by students. They toured Pike County's new Advanced Academics and Accelerated Learning Center, which provides robotics, science, computer labs, and classroom space for students enrolled in the system's academic academies.

Students in Pike County often spend half a day taking classes on the Troy University campus or using the Advanced Learning Center's computer lab to take online courses.

In 2018, 20 students received an associate's degree along with their high school diploma, with higher numbers expected in coming years as new programs mature.

Opportunities should be structured that support CTE-accelerated college learning in all high schools, giving students an opportunity to earn a postsecondary certificate while in high school or take college coursework that enriches their skills and professionalization. Where appropriate, programs of study can include a sequence of courses that high school and postsecondary CTE staff should be collaborating on regularly, including course sequencing, vertical alignment, and opportunities for credit transfer agreements.

The relationship between Alabama's K-12 and community college systems are complex, but federal workforce legislation requires more coherent comprehensive collaboration in CTE. There are notable examples of such collaboration, such as Pike County. Examples of K-12/postsecondary collaboration in other states are provided in Appendix D.

Integrate apprenticeships, on-the-job learning, and project-based learning into CTE Programs of Study

Active learning through apprenticeships, internships, project-based learning, and other forms of work-based learning will strengthen the relevance of student learning to their career field. Student-generated hands-on products and assessment of work-related tasks should be utilized as much as possible and emphasized more than seat time.

Work-based learning can challenge students to apply technical, academic, and employability knowledge and skills within authentic scenarios. These experiences make the connection between academic and technical knowledge and skills, including cross-disciplinary collaboration. Teaching is enriched with relevant equipment, technology, and materials.

Work-based learning has become a major component of career and technical education. Consistent with this direction in the field, critics of standardized tests are advocating more use of task-oriented assessments that evaluate hands-on processes and the products students produce in work related activities. Can they walk the walk and talk the talk?

Alabama Office of Apprenticeship

One of the newest and most exciting developments in the state is the Alabama Office of Apprenticeship (AOA) under the Department of Commerce. Drawing on practices of the past where professionals such as lawyers and tradesman actively learned their practice through an apprenticeship, apprenticeships are now re-emerging as another form of postsecondary education across the nation as an alternative to college. Unlike the days of past where an aspiring attorney or plumber needed to have connections to get an apprenticeship, students and older adults can access apprenticeships through the AOA. An apprenticeship provides students with the opportunity to earn income while they gain needed experience and receive industry training through the community college system. Apprenticeship experience and training can also be developed as part of a high school student's Program of Study and career plan.

More attention needs to be given to promoting the apprenticeship program with a wider spectrum of employers across the state.

Strengthen student employability skills and social-emotional health

The soft skills needed to perform in the workplace should not be overlooked. Given the influence of home and community, this becomes a more significant issue for some students than others. Students may not come from a background that prepares them for the culture of mature work settings, meeting expectations for dress, the importance of showing up and being on time, properly communicating with others, and dealing with stress and conflict.

Since the culture shaping the workplace varies in different professions, students can get a head start through work-based learning, Student Career and Technical Organizations (CTO), and projects that help them gain experience working with others and learning the norms of their field.

Formal training on do's and don'ts might be helpful but can also be difficult to deliver in a meaningful way that students take seriously. Student active learning, peer and supervisory feedback, learning in the workplace, and guidance from a good career coach is likely to be more effective.

Another important issue related to behavior and soft skills in the workplace is the social-emotional health of the student. Students and workers enter work settings beset by a number of problems related to mental health that can affect performance. A comprehensive program helping students prepare for college and career needs to rely on community-based services for help. Career coaches who build trusting relationships with students can serve as a meaningful mentor and advocate who helps them connect to the help they need.

Career coaches in Alabama concentrate on helping students learn about themselves and their career interests, and engage in career exploration and career planning. This is enriched through the use of assessments and guidance on market demands. They are further expected to work with students in developing their employability skills. One of the challenges to accomplishing this in a meaningful way is having enough coaches to reach students on a personalized level. Coaches generally work across several schools. The Career Coach program in Alabama should be reviewed to determine if it is stretching coaches too thinly among schools, especially those with high enrollments and high percentages of underperforming students where extra assistance is needed. The degree to which they are impacting students should also be assessed.

Strengthen the CTE Faculty Pipeline

There is a national shortage of CTE faculty, and concerns have been raised about the quality of faculty as effective teachers. It can be difficult to focus on quality when just having enough teachers in place to teach courses is a problem. Perkins V challenges states to study and strengthen their pipeline of CTE faculty.

The new law requires states and local recipients of Perkins funds to address how they are recruiting, preparing, and retaining CTE faculty and supporting them with professional development. While not a uniquely Alabama challenge, Alabama should dedicate more resources to these efforts.

An Opportunity to Maximize Value of the WorkKeys Assessment

The WorkKeys assessments provide a meaningful assessment of applied cognitive skills useful in the workplace. WorkKeys also includes a full suite of resources that can help provide training for teachers, test preparation for students, and design career curriculum to help students improve their “hard” and “soft” skill levels. ACT Career Ready 101 is designed to help teachers bring work readiness skills into the classroom.

WorkKeys Assessments and Resources should remain available for all students and required for CTE students.

The WorkKeys job profiling connects job tasks with WorkKeys assessments to identify benchmarks for hiring and training. While the foundational skills learned through WorkKeys are relevant to college and career preparation, the value of a high WorkKeys score for CTE appears to be especially important. As cited earlier, the Alabama Department of Labor produces a chart that shows the median score on WorkKeys for occupations requiring an associate degree or lower.

Raise awareness of WorkKeys with employers, businesses, educators, and policymakers.

As more employers use WorkKeys in reviewing job applicants, schools and training programs will put more emphasis on WorkKeys.

Currently, schools and communities vary in the degree to which they take WorkKeys seriously. Indeed, the assessments do not provide insight about a student's competency for a job requiring specialized knowledge and skills or their softs skills. Yet they do appear to provide a very useful assessment of applied cognitive skills relevant to the workplace.

Schools that do not take WorkKeys seriously may be shortchanging some of their students. WorkKeys should remain available to all students, and the BEA strongly recommends that all CTE students become WorkKeys certified at the silver level or above.

Issues of access to data emphasize ease of access, ease of use, and the accuracy of data. Each of these elements require capacity building at the state level and professional development on how to use data at the local level.

CONCLUSION

A wide spectrum of partners and resources are needed to meet the state's workforce goals. At a deeper, more long-range level, it involves the challenge of building the state's education infrastructure to help all children learn and become college and career ready. This also involves leadership working together to articulate, implement, and sustain an effective plan.

Alabama's future should be characterized by continuous improvement rather than continually starting over.

Alabama's future should be characterized by continuous improvement rather than continually starting over.

Define what matters and then measure what matters with integrity. Using the system to meet numeric goals corrupts the legitimacy of measurements and everything else.

Provide students with a healthy start and develop their reading and math skills. Provide opportunities for career exploration and students learning about themselves as early as elementary and middle school. As the state acts to strengthen CTE credentialing, this is a positive opportunity for improving CTE rigor and quality and building a collaborative K-12 and postsecondary network focused on what is best for students and the state's economic needs.

Every student deserves to be educated in a school that will help them follow a pathway to high school graduation, meaningful college and career readiness, and a job in Alabama that offers opportunity for advancement.

From the outset, this report recognized that public K-12 and postsecondary education alone cannot meet the goal of 500,000 highly skilled employees by 2025. However, one of the most valuable contributions this era can make is to build a system where all those members of the population who struggle, are on the sidelines, or worse, can be equipped to live fruitful and productive lives. There are exemplary programs in the state that are changing lives. PARCA is currently documenting the work of organizations like SAFE,

Alabama Possible, and others with plans to share their stories so that others in the state can learn from their experience in leveraging community partnerships to strengthen families, parents, children, and local economic development.

APPENDICES

Appendix A. The Alabama Literacy Act

Alabama Literacy Act (Act 2019-523)

The Literacy Act refocuses attention on early reading in kindergarten through third grade, with the expectation that all students should be able to read by the end of the third grade. Students who cannot will be held back. Though minority students will be disproportionately affected, research shows that students who are held back and learn to read with intensive reading intervention do better in school than comparable students who are not held back.⁴¹

The State Superintendent of Education is convening a standing task force to provide recommendations for comprehensive core reading and reading intervention programs, teacher professional development in the “Science of Reading,” and valid and reliable assessments that can be used for screening, diagnostic, and instructional purposes. Research has identified how skilled reading works, and helping teachers learn the science behind reading can make a difference, as demonstrated in Mississippi.

Funds appropriated to support the Literacy Act are designed to be allocated for:

- The Alabama Summer Achievement Program;
- Regional literacy specialists;
- Pre-service and in-service teacher professional learning activities in reading for elementary school teachers;
- Curricula to support student interventions; and
- Early identification and support for students with dyslexia and other specific needs that affect reading.

⁴¹ West, M (2012). *Is Retaining Students in the Early Grades Self-Defeating?* See <https://www.brookings.edu/research/is-retaining-students-in-the-early-grades-self-defeating/>

The Summer Achievement Program, under the direction of the Alabama Reading Initiative and Alabama Department of Early Childhood Education, provides students entering kindergarten through fourth grade more than 70 hours of reading and literacy instruction over six weeks.

Regional literacy specialists (coaches) will provide intensive support for elementary schools that are among the lowest performing 5% of elementary schools. Each of these schools will be assigned its own regional literacy specialist to serve as a resource for professional development in reading instruction throughout the school.

Elementary schools that are not among the lowest 5% in reading performance will also receive more limited support from a literacy specialist who will serve multiple schools.

Appendix B. The Governor's Advisory Council for STEM

In 2019, Governor Ivy established the Governor's Advisory Council for Excellence in STEM (Science, Technology, Engineering and Mathematics). This was based on a number of concerns, including low test scores in mathematics and the need to meet future workforce demands in fields that draw heavily on math and science. In November 2019, the Advisory Council issued a report focused on five priority areas critical to Alabama's future:

- STEM Exploration and Discovery
- Numeracy and STEM Fluency
- Pre-service STEM Educator Preparation
- In-Service STEM Educator Development
- Career Pathways for In-Demand STEM Occupations

The Council identified 22 priority area recommendations, including strategies to help students and parents gain greater awareness and interest in STEM career paths, strengthening the quality of mathematics instruction for all students, investing in a multi-year teacher recruitment campaign, increasing industry partnerships, and providing for statewide coordination across STEM-related initiatives. The focus on improving mathematics instruction in the early grades is central to workforce development.

The Advisory Council recommended that instruction be improved by placing a math coach in every Alabama elementary school to strengthen classroom-embedded instructional support. The Council recommended strengthening and widening use of the state's onsite teacher mentoring program. Another recommendation focused on providing professional development to district and school leaders that highlights the importance of STEM fields and strategies for enriching STEM in their districts and schools. Finally, identifying and using effective evidence-based mathematics curricula is essential.

All together there is agreement that the core levers needed in both reading and math are:

- District and school leaders focusing on and supporting early reading, math, and science instruction and enrichment as a priority
- Using effective evidence-based NAEP related curricula designed to bring students to mastery in reading and math
- Supporting teachers through hands-on coaching and mentoring
- Supporting students through targeted, personalized assistance
- Assessing progress and using data to guide instruction, student intervention, and strategic allocation of resources.

Data can be used to guide coaching. As teachers receive direct access to easily usable data, it can be used to support ongoing planning, real-time learning, and strategic response to student problems.

Appendix C. 2018 ACTE Quality Framework, Association for Career and Technical Education

Drawn from 2018 ACTE Quality CTE: Program of Study Framework by Catherine Imperator and Alisha Hyssop⁴²

The 2018 ACTE quality framework is the latest step in ACTE’s ongoing High-quality CTE Initiative—an initiative designed to answer the question “What is high-quality CTE?” During this project, we have identified a comprehensive, research-based quality CTE program of study framework and tested that framework through a recent pilot study.

The framework is designed to apply to individual, local CTE programs of study spanning secondary and postsecondary education, although it may be adapted to other units of analysis.

This voluntary tool can be used for program self-evaluation, program improvement, and to encourage secondary-postsecondary collaboration.

The framework’s 12 elements and 92 criteria are designed to be as mutually exclusive as possible.

1. Standards-aligned and Integrated Curriculum This element addresses the development, implementation, and revision of the program of study curriculum, including the relevant knowledge and skills taught in the program and the standards on which they are based.

- The curriculum is based on industry-validated technical standards and competencies.
- The curriculum is aligned with relevant content and standards for core subjects, such as reading, math, and science, including federal, state and/or local standards as appropriate.

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- The curriculum incorporates employability skill standards that help students succeed in the workplace, such as problem solving, critical thinking, teamwork, communications, and workplace etiquette.
- The program of study curriculum is developed with employer input to prepare students for both further education and in-demand and emerging careers.
- The curriculum allows for student application of integrated knowledge and skills in authentic scenarios.
- Program of study standards are publicly available and accessible to students, parents/guardians (as appropriate), partners, and the public.
- The curriculum is reviewed regularly by all relevant stakeholders and revised as necessary to reflect the latest advances in the industry, evidence-based program models, and evaluations of student performance.

2. Sequencing and Articulation This element addresses the key components of the definition of a program of study and the articulation, coordination, and collaboration that support programs of study, career pathways, and accelerated learning.

- The program of study includes a sequence of courses and/or competencies across secondary and postsecondary education that incorporates technical, academic, and employability knowledge and skills.
- The program of study starts with broad foundational knowledge and skills and progresses in specificity to build students' depth of knowledge and skills.

- Content and standards within the program of study are non-duplicative and vertically aligned to prepare students to transition seamlessly to the next level of education.
- The program of study sequence leads to one or more recognized postsecondary credentials, including industry certifications, licenses, apprenticeship certificates, postsecondary certificates and degrees.
- The program of study allows for multiple entry and exit points that incorporate recognized postsecondary credentials.
- Students in the program of study have opportunities to earn credit that articulates to the next level of education, such as through dual or concurrent enrollment programs or stackable credentials.
- Secondary and postsecondary CTE staff collaborate regularly on course sequencing, vertical alignment, and opportunities for credit transfer agreements. The program of study is coordinated with broader career pathways systems, as defined in the Workforce Innovation and Opportunity Act, as appropriate and available.

3. Student Assessment. This element addresses the types and quality of assessments used in the program of study, including the types of knowledge and skills that should be assessed and assessments that lead to recognized postsecondary credentials.

- Formative and summative assessments are integrated throughout the program of study to validate student learning gains, including both classroom/school-based and standardized, third party assessments, as appropriate.
- Assessments are aligned to program standards and curriculum and appropriate to students' current level of knowledge and skill attainment.
- Assessments are valid, reliable, and developed or chosen in accordance with relevant quality standards.

- The program of study incorporates multiple forms of assessment, including performance-based assessment where students must demonstrate the application of their knowledge and skills.
- Assessments within the program of study provide objective information on student attainment of industry-validated technical knowledge and skills.
- Assessments within the program of study provide objective information on student attainment of academic knowledge and skills.
- Assessments within the program of study provide objective information on student attainment of employability knowledge and skills.
- The program of study prepares students for assessments that lead to recognized postsecondary credentials, as available and appropriate.

4. Prepared and Effective Program Staff. This element addresses the qualifications and professional development of program of study staff, including secondary CTE teachers, postsecondary CTE faculty, administrators, and other personnel.

- CTE staff supporting the program of study meet appropriate state, district and/ or institution certification and licensing requirements.
- CTE educators maintain up-to-date knowledge and skills across all aspects of an industry.
- CTE educators maintain relevant evidence-based pedagogical knowledge and skills.
- CTE staff engage in ongoing, rigorous professional development on a wide range of topics covering all elements of a high-quality program of study, as described in ACTE's Quality CTE Program of Study Framework, which might include pursuit of advanced educator certification.

- CTE staff demonstrate leadership and commitment to the profession.
- CTE administrators ensure that other program staff have the time, resources, and supports to implement each element of a high-quality program of study, as described in ACTE's Quality CTE Program of Study Framework.
- CTE and academic staff collaborate regularly and frequently to coordinate curriculum, instruction, assessment, and extended learning activities and to analyze data for program improvement.

5. Engaging Instruction. This element addresses instructional strategies within a student-centered learning environment that support student attainment of relevant knowledge and skills.

- Program of study instruction is driven by relevant content area standards and learning objectives.
- Project-based learning and related instructional approaches, such as problem-based, inquiry-based, and challenge-based learning are fully integrated into the program of study.
- Contextualized instruction results in students applying technical, academic, and employability knowledge and skills within authentic scenarios.
- Instruction emphasizes the connection between academic and technical knowledge and skills, including through cross-disciplinary collaboration.
- Instruction incorporates relevant equipment, technology, and materials to support learning.
- Instruction is flexible, differentiated, and personalized to meet the needs of a diverse student population.
- Management of the educational environment builds a culture of learning and respect.

6. Access and Equity. This element addresses program of study promotion, student recruitment, and strategies that support access and equity for various student populations, including by gender, race and ethnicity, and special population status (such as individuals with disabilities, individuals from economically disadvantaged families, and English learners).

- The program of study is promoted to all potential participants and their parents/guardians (as appropriate), in a manner that is free from bias, inclusive, and non-discriminatory.
- Students are actively recruited from populations that have been traditionally underrepresented, including by gender, race and ethnicity, and/or special population status.
- Career guidance is offered to all potential and current program of study participants in a manner that is free from bias, inclusive, and non-discriminatory.
- Facilities, equipment, technology, and materials are provided in a way that ensures all students have the opportunity to achieve success in the program of study, including by meeting Title IX, Americans with Disabilities Act, and other accessibility requirements.
- Curriculum, instruction, materials, and assessments are free from bias, inclusive, and non-discriminatory, and offered in a way that ensures all students have the opportunity to achieve success in the program of study, including through accommodations, as appropriate.
- Supportive services, such as tutoring and transportation assistance, are provided to ensure all students have the opportunity to achieve success in the program of study, as appropriate.
- Appropriate actions are taken to eliminate barriers to extended learning experiences, such as work-based learning, CTSO participation, and articulated credit for all students, including special populations.

7. Facilities, Equipment, Technology and Materials. This element addresses the alignment, appropriateness, and safety of the physical/material components of the program of study, including laboratories, classrooms, computers, industry-specific equipment, and tools and supplies that support learning.

- Facilities, equipment, technology, and materials used in the program of study reflect current workplace, industry, and/or occupational practices and requirements.
- Facilities, equipment, technology, and materials support and align to curriculum standards and program objectives.
- Facilities, equipment, technology, and materials meet federal, state, and local standards for occupational safety and health in the related industry, as appropriate.
- Students demonstrate safe and appropriate use and maintenance of facilities, equipment, technology, and materials within the program of study.
- Processes are defined and resources provided to regularly inspect, update, and replace facilities, equipment, technology, and materials.
- The program of study maximizes student access to relevant facilities, equipment, technology, and materials through partnerships and flexible delivery models.

8. Business and Community Partnerships. This element addresses business and community partner recruitment, partnership structure, and the wide variety of activities partners should be engaged in to support the program of study and ensure programs are aligned with workforce needs.

- Representatives of the program of study actively conduct outreach activities to develop partnerships to ensure the program of study is informed by employer and community needs.

- Partnerships are formed with a diverse range of stakeholders who represent differing perspectives, including employers from small, medium, and large businesses; industry representatives; community, workforce and economic development agencies; and other education stakeholders.
- The program of study has a formalized, structured approach to coordinating partnerships, such as an advisory board or sector partnership.
- Partners ensure that the program of study meets current and future workforce demand and skill needs by identifying, validating, and reviewing curriculum; identifying appropriate assessments and recognized postsecondary credentials; and evaluating facilities, equipment, technology, and materials to ensure consistency with industry standards.
- Partners support students' and teachers' extended learning by identifying, providing, and evaluating work-based learning experiences for students; participating in CTSO activities; for example, by serving as mentors and judges; offering opportunities, such as externships, for educators to stay current with industry-relevant knowledge and skills
- Partners support the program of study in tangible ways, such as by investing funds, providing in-kind support, and/or helping raise external funds to meet program of study goals.
- Partners support program of study sustainability by advocating for and promoting the program of study.
- Partners help to evaluate the effectiveness of the program of study in preparing students for further education and careers.

9. Student Career Development. This element addresses strategies that help students gain career knowledge and engage in education and career planning

and decision-making, including career counseling, career assessments, curricula that helps students learn about careers, information about educational opportunities and workforce trends, and job search information and placement services.

- Comprehensive career development is coordinated and sequenced to promote and support the career decision-making and planning of all students, including prior to entering the program of study.
- Each CTE student in the program of study has a personalized, multi-year education and career plan that reflects exploration of the student's interests, preferences, and abilities and informs course selection, planning for further education and a career, and involvement in extended learning.
- Career development activities are aligned with relevant national, state, and/or local standards.
- Students in the program of study and their parents/guardians (as appropriate) are provided accurate and timely information on extended learning experiences available through the program of study, such as work-based learning, CTSO participation, and articulated credit.
- Students in the program of study and their parents/guardians (as appropriate) are provided accurate and timely information on further education and training options, including application procedures, enrollment, financing, and their projected educational, employment, and earnings outcomes.
- Students in the program of study and their parents/guardians (as appropriate) are provided accurate and timely information on regional occupational trends and outlooks, high-demand and high-wage career opportunities, and the educational pathways that lead to current and projected career opportunities.

- Students in the program of study have access to job search information and placement services as they near completion of the program of study.
- Career development professionals have access to professional development and up-to-date information on extended learning experiences, education and training options, and regional occupational trends to aid students in education and career planning and decision-making.

10. Career and Technical Student Organizations (CTSOs). This element addresses CTSOs, which are organizations for individuals enrolled in CTE programs that engage in activities as an integral part of the instructional program, including the delivery and availability of CTSO opportunities for student skill and leadership development.

- The organization is an integral, intra-curricular part of the program of study, available to every student at some point during the program of study.
- The organization is aligned with relevant national, state, and/or local standards.
- Organization activities develop and reinforce relevant technical, academic, and employability knowledge and skills.
- The organization provides opportunities for students to interact with business professionals.
- The organization provides opportunities for students to participate in relevant competitive events.
- The organization provides opportunities for students to participate in relevant community and school service activities.

- The organization provides opportunities for students to participate in leadership development activities.
- The organization is supervised by CTE staff with clearly defined roles.

11. Work-based Learning. This element addresses the delivery of a continuum of work-based learning involving sustained, meaningful interactions with industry or community professionals that foster in-depth, firsthand engagement with the tasks required in a given career field. Experiences may be delivered in workplaces, in the community, at educational institutions and/or virtually, as appropriate, and include a range of activities such as workplace tours, job shadowing, school-based enterprises, internships, and apprenticeships.

- A full continuum of work-based learning experiences, progressing in intensity, is accessible to every student at some point during the program of study.
- Work-based learning experiences are aligned with relevant national, state, and/or local standards.
- Work-based learning experiences develop and reinforce relevant technical, academic, and employability knowledge and skills.
- Work-based learning experiences are intentionally aligned with each student's education and career goals.
- Work-based learning experiences are provided through delivery methods that maximize meaningful interaction with business professionals.
- Requirements and procedures for work-based learning experiences that address access, selection, liability, supervision, rights and responsibilities, safety, transportation, learning objectives, and evaluations are formalized and shared in advance of work-based

learning experiences with employers, students, and parents/guardians (as appropriate).

- Work-based learning experiences comply with relevant federal, state, and local laws and regulations.
- Work-based learning experiences are supervised by CTE staff with clearly defined roles. ii. Students engage in reflection and document learning resulting from work-based learning experiences, such as through a portfolio or presentation.

12. Data and Program Improvement. This element addresses collection, reporting, and use of data for continuous evaluation and program improvement, as well as appropriate access to relevant data.

- All stakeholders understand why data are collected, how they will be used, and their value in supporting student success.
- Processes and supports are in place in the program of study to ensure the timely and accurate collection and submission of valid and reliable data for required reporting. In addition to data required for reporting, data aligned with program of study goals and the elements of ACTE's Quality CTE Program of Study Framework are collected to aid in program improvement.
- Labor market information is used to inform program of study decision-making and support program improvement.
- Privacy and security protections that adhere to all federal, state, and local privacy laws are in place for data collection, storage, analysis, and reporting.
- Educators have access to relevant, valid, and reliable aggregate data on all students participating in the program of study.

- Educators have access to relevant, valid, and reliable data disaggregated by gender, race and ethnicity, and special population status, thus facilitating the comparisons of access and performance among subpopulations and with the general student population and the identification of equity gaps.
- Data is shared in an easy-to-understand format with students, parents/guardians (as appropriate), partners, and the public.
- There is a formal process in place for the systematic and continuous use of data, including student access and performance data and program evaluation results, for program improvement, including addressing equity gaps.

Appendix D. Examples of CTE/Postsecondary Collaborations

Examples of Collaboration in Selected States⁴³

California: In 2013–2014, Career Pathways Trust (CCPT) originally set aside \$250 million for one-time competitive grants to school districts, county superintendents, charter schools, and community colleges with the intent to promote cross-sector collaboration, design and implement effective CTE career pathways in grades K–14, and focus deliberate attention to developing programs of study aligned to “high-need, high-growth sectors.” These grants involve the participation and partnerships with 647 LEAs, including K–12 schools, adult schools, and charter schools; 85 community colleges; and 845 business partners. In response to the strong demand for CCPT grant funding, the Legislature appropriated in the 2014 Budget Act an additional \$250 million for a second round of CCPT grant awards, and the Legislature codified the CCPT in the California *Education Code*.⁴⁴

Colorado: The Key Industries Talent Pipeline Working Group brings together the state Workforce Development Council, the Department of Higher Education, the Department of Education, the Department of Labor and Employment, and the Colorado Office of Economic Development to use sector partnerships in advising the development of career pathway programs for in-demand occupations in key industries.

Louisiana: Jump Start CTE programs are developed jointly by regional teams consisting of LEAs, technical and community colleges, business and industry leaders, and economic and workforce development experts. Jump Start proposals may include indications of regional job demand by targeted industry sector, provided by the Louisiana Workforce Commission (LWC), a Louisiana postsecondary institution, or an equivalently credible source, and

43 Zinth, J. (2015). *Aligning K-12 and Postsecondary Career Pathways with Workforce Needs*. Education Commission of the States.

44 For California CCPT see <https://www.cde.ca.gov/ci/ct/pt/>

descriptions of the competencies and skills that leading local industries desire in entry-level hires.

New Mexico: The Higher Education Department, Public Education Department, and Workforce Solutions Department collaborate on high-quality career pathways that bridge high school curricula, postsecondary studies, and 21st-century job opportunities.

Tennessee: The labor education alignment program (LEAP) facilitates the development of regional partnerships between industry, postsecondary, and secondary stakeholders, which are intended to build career pathways in high-skill, high-technology industries. Area employers provide program input and career training to students, while students at colleges of applied technology, community colleges, and high schools combine occupational training with academic credit and industry exposure to acquire postsecondary credentials valued by employers.

Appendix E. Graduation and College and Career Ready Rates by System and School, 2017-18

System Name	School Name	Graduation Rate	Percent of Seniors College and Career Ready	Gap between Graduation and CCR Rate
Autauga County	Autaugaville Sch	87%	61%	26%
	Billingsley High Sch	81%	80%	2%
	Entire System	89%	80%	9%
	Marbury High Sch	90%	75%	15%
	Prattville High Sch	90%	82%	7%
Baldwin County	Baldwin Co High Sch	84%	73%	11%
	Baldwin County Virtual School	96%	99%	-2%
	Daphne High Sch	95%	86%	9%
	Entire System	88%	80%	8%
	Fairhope High Sch	93%	91%	2%
	Foley High Sch	84%	70%	14%
	Gulf Shores High Sch	87%	81%	6%
	Robertsdale High Sch	81%	71%	10%
	Spanish Fort High Sch	93%	90%	3%
	Entire System	77%	13%	64%
Barbour County	Barbour Co High Sch	77%	13%	64%
	Entire System	77%	13%	64%
Bibb County	Bibb Co High Sch	87%	80%	6%
	Entire System	88%	81%	8%
Blount County	West Blocton High Sch	91%	82%	9%
	Appalachian Sch	93%	85%	9%
	Cleveland High Sch	97%	86%	11%
	Entire System	93%	84%	9%
	Hayden High Sch	96%	86%	10%
	JB Pennington High Sch	84%	73%	11%
	Locust Fork High Sch	91%	85%	6%
	Southeastern Elem Sch	100%	88%	13%
Bullock County	Susan Moore High Sch	90%	88%	2%
	Bullock Co High Sch	87%	45%	42%
	Entire System	87%	45%	42%
Butler County	Entire System	83%	58%	25%
	Georgiana Sch	96%	53%	42%
	Greenville High Sch	78%	53%	25%
	McKenzie High Sch	92%	89%	3%
Calhoun County	Alexandria High Sch	90%	83%	7%
	Entire System	92%	73%	19%
	Ohatchee High Sch	98%	78%	20%
	Pleasant Valley High Sch	97%	82%	15%
	Saks High Sch	97%	68%	28%
	Weaver High Sch	90%	62%	28%
	Wellborn High Sch	79%	52%	27%
	White Plains High Sch	96%	84%	12%
Chambers County	Entire System	82%	55%	27%
	Lafayette High Sch	88%	48%	40%
	Valley High Sch	80%	58%	23%
Cherokee County	Cedar Bluff High Sch	100%	77%	23%
	Cherokee Co High Sch	91%	77%	14%
	Entire System	94%	75%	18%
	Gaylesville High Sch	93%	82%	11%
	Sand Rock High Sch	96%	70%	25%
	Spring Garden High Sch	91%	72%	19%
Chilton County	Chilton Co High Sch	85%	65%	20%
	Entire System	87%	62%	25%
	Isabella High Sch	90%	61%	29%
	Jemison High Sch	84%	62%	21%
	Maplesville High Sch	87%	47%	39%

Choctaw County	Thorsby High Sch	91%	63%	29%
	Verbena High Sch	94%	58%	36%
	Choctaw Co High Sch	86%	61%	25%
	Entire System	83%	72%	11%
Clarke County	Southern Choctaw High Sch	80%	82%	-2%
	Clarke Co High Sch	93%	60%	33%
	Entire System	93%	67%	26%
Clay County	Jackson High Sch	92%	72%	21%
	Central High Sch of Clay Co	88%	70%	18%
	Entire System	88%	70%	18%
Cleburne County	Cleburne Co High Sch	93%	78%	15%
	Entire System	94%	81%	13%
	Ranburne High Sch	97%	86%	11%
Coffee County	Entire System	95%	98%	-2%
	Kinston Sch	96%	100%	-4%
	New Brockton High Sch	98%	97%	2%
Colbert County	Zion Chapel High Sch	91%	96%	-6%
	Cherokee High Sch	93%	64%	30%
	Colbert Co High Sch	90%	75%	15%
	Colbert Heights High Sch	95%	82%	12%
	Entire System	93%	76%	17%
Conecuh County	Entire System	84%	62%	22%
	Genesis Innovative School	93%	43%	50%
	Hillcrest High Sch	82%	67%	15%
Coosa County	Central High Sch	81%	71%	10%
	Entire System	81%	71%	10%
Covington County	Entire System	91%	77%	14%
	Floral High Sch	92%	76%	16%
	Pleasant Home Sch	91%	71%	20%
	Red Level High Sch	86%	76%	10%
	Straughn High Sch	91%	80%	11%
Crenshaw County	Brantley High Sch	98%	73%	25%
	Entire System	92%	68%	25%
	Highland Home Sch	91%	70%	22%
	Luverne High Sch	89%	63%	27%
Cullman County	Cold Springs High Sch	97%	97%	0%
	Entire System	94%	90%	3%
	Fairview High Sch	93%	92%	1%
	Good Hope High Sch	92%	83%	9%
	Hanceville High Sch	93%	89%	4%
	Holly Pond High Sch	93%	82%	10%
	Vinemont High Sch	93%	96%	-3%
	West Point High Sch	96%	96%	0%
	Ariton Sch	98%	100%	-2%
Dale County	Dale Co High Sch	97%	86%	11%
	Entire System	97%	92%	5%
	George W Long High Sch	94%	94%	0%
Dallas County	Dallas Co High Sch	93%	59%	34%
	Entire System	92%	44%	49%
	Keith Middle-High Sch	90%	19%	70%
DeKalb County	Southside High Sch	94%	40%	54%
	Collinsville High Sch	95%	75%	20%
	Crossville High Sch	90%	63%	28%
	Entire System	92%	74%	18%
	Fyffe High Sch	82%	77%	6%
	Geraldine Sch	88%	63%	24%
	Ider Sch	96%	84%	11%
	Plainview Sch	94%	86%	8%
	Sylvania Sch	100%	80%	20%

Elmore County	Valley Head High Sch	89%	74%	15%
	Elmore Co High Sch	89%	83%	5%
	Entire System	90%	82%	8%
	Holtville High Sch	86%	92%	-7%
	Stanhope Elmore High Sch	92%	73%	19%
Escambia County	Wetumpka High Sch	91%	86%	5%
	Entire System	92%	75%	17%
	Escambia Co High Sch	92%	60%	32%
	Flomaton High Sch	93%	90%	2%
Etowah County	W S Neal High Sch	92%	80%	12%
	Entire System	95%	81%	14%
	Gaston High Sch	98%	89%	9%
	Glencoe High Sch	95%	80%	14%
	Hokes Bluff High Sch	95%	83%	12%
	Sardis High Sch	97%	82%	16%
	Southside High Sch	95%	80%	14%
Fayette County	West End High Sch	91%	72%	18%
	Berry High Sch	94%	93%	2%
	Entire System	94%	91%	2%
	Fayette Co High Sch	93%	94%	-1%
Franklin County	Hubbertville Sch	94%	82%	12%
	Belgreen High Sch	88%	85%	3%
	Entire System	91%	80%	12%
	Phil Campbell High Sch	86%	73%	13%
	Red Bay High Sch	98%	93%	5%
	Tharptown High Sch	93%	63%	29%
Geneva County	Vina High Sch	100%	96%	4%
	Entire System	94%	87%	7%
	Geneva Co High Sch	98%	96%	2%
	Samson High Sch	95%	97%	-2%
	Slocumb High Sch	90%	74%	16%
Greene County	Entire System	82%	51%	31%
	Greene Co High Sch	82%	51%	31%
Hale County	Entire System	91%	49%	42%
	Greensboro High Sch	94%	36%	58%
Henry County	Hale Co High Sch	88%	65%	22%
	Abbeville High Sch	85%	57%	28%
	Entire System	92%	84%	8%
Houston County	Headland High Sch	95%	97%	-2%
	Ashford High Sch	96%	94%	3%
	Cottonwood High Sch	90%	92%	-2%
	Entire System	94%	92%	3%
	Houston Co High Sch	94%	89%	6%
	Rehobeth High Sch	96%	91%	5%
Jackson County	Wicksburg High Sch	93%	94%	-1%
	Entire System	92%	82%	10%
	North Jackson High Sch	81%	69%	13%
	North Sand Mt Sch	96%	91%	5%
	Paint Rock Valley High Sch	100%	56%	44%
	Pisgah High Sch	96%	89%	8%
	Section High Sch	92%	73%	18%
	Skyline High Sch	100%	100%	0%
Jefferson County	Woodville High Sch	93%	91%	2%
	Clay-Chalkville High Sch	88%	55%	33%
	Corner High Sch	99%	89%	10%
	Ctr Point High Sch	81%	51%	30%
	Entire System	92%	68%	23%
	Fultondale High Sch	93%	84%	9%
	Gardendale High Sch	89%	78%	11%

	Hueytown High Sch	88%	65%	23%
	McAdory High Sch	94%	69%	26%
	Minor High Sch	95%	59%	36%
	Mortimer Jordan High Sch	92%	83%	9%
	Oak Grove High Sch	95%	83%	11%
	Pinson Valley High Sch	94%	63%	31%
	Pleasant Grove High Sch	95%	69%	26%
	Shades Valley High Sch	96%	76%	20%
Lamar County	Entire System	92%	86%	6%
	Lamar Co High-Intermediate	91%	81%	9%
	South Lamar Sch	96%	91%	6%
	Sulligent Sch	90%	87%	3%
Lauderdale County	Brooks High Sch	96%	81%	15%
	Central High Sch	91%	80%	11%
	Entire System	93%	82%	10%
	Lauderdale Co High Sch	90%	83%	8%
	Lexington Sch	99%	88%	11%
	Rogers High Sch	95%	92%	3%
	Waterloo High Sch	100%	74%	26%
	Wilson High Sch	85%	74%	11%
Lawrence County	East Lawrence High Sch	96%	88%	8%
	Entire System	93%	79%	14%
	Hatton High Sch	96%	80%	16%
	Lawrence Co High Sch	89%	71%	19%
	R A Hubbard High Sch	100%	96%	4%
Lee County	Beauregard High Sch	89%	65%	24%
	Beulah High Sch	78%	74%	4%
	Entire System	90%	68%	22%
	Loachapoka High Sch	95%	82%	13%
	Smiths Station High Sch	92%	67%	25%
Limestone County	Ardmore High Sch	93%	95%	-2%
	Clements High Sch	92%	91%	1%
	East Limestone High Sch	94%	85%	9%
	Elkmont High Sch	91%	90%	1%
	Entire System	90%	87%	3%
	Limestone County Virtual Sch	64%	51%	13%
	Tanner High Sch	84%	82%	3%
	West Limestone High Sch	94%	95%	-1%
Lowndes County	Calhoun High Sch	81%	64%	17%
	Central High Sch	81%	61%	20%
	Entire System	81%	62%	19%
Macon County	Booker T Washington High	89%	66%	23%
	Entire System	89%	64%	25%
	Notasulga High Sch	89%	59%	30%
Madison County	Buckhorn High Sch	94%	78%	16%
	Entire System	95%	82%	13%
	Hazel Green High Sch	96%	87%	8%
	Madison Co High Sch	96%	87%	9%
	New Hope High Sch	94%	79%	16%
	Sparkman High Sch	94%	80%	14%
Marengo County	Amelia L. Johnson High Sch	83%	72%	11%
	Entire System	88%	78%	10%
	Marengo High Sch	91%	72%	19%
	Sweet Water High Sch	88%	86%	2%
Marion County	Brilliant High Sch	69%	54%	15%
	Entire System	89%	79%	10%
	Hackleburg High Sch	95%	84%	11%
	Hamilton High Sch	91%	81%	10%
	Marion Co Alt Sch	0%	33%	-33%

Marshall County	Marion Co High Sch	83%	83%	0%
	Phillips High Sch	95%	78%	18%
	Asbury High Sch	97%	68%	29%
	Brindlee Mt High Sch	87%	71%	16%
	Douglas High Sch	88%	72%	16%
Mobile County	Entire System	91%	75%	16%
	Kate D Smith DAR High Sch	97%	86%	10%
	Alma Bryant High Sch	85%	80%	4%
	Baker High Sch	94%	91%	3%
	Ben C Rain High Sch	90%	90%	0%
Monroe County	CF Vigor High Sch	92%	94%	-2%
	Citronelle High Sch	86%	74%	12%
	Entire System	86%	81%	5%
	Evening Educational Options	0%	17%	-17%
	John L Leflore Magnet Sch	85%	79%	7%
Montgomery County	Lillie B Williamson High Sch	80%	75%	4%
	Mary G Montgomery High Sch	88%	91%	-4%
	Mattie T Blount High Sch	90%	94%	-4%
	Murphy High Sch	90%	67%	23%
	Theodore High Sch	81%	75%	6%
Morgan County	WP Davidson High Sch	85%	83%	2%
	Entire System	86%	69%	17%
	Excel High Sch	90%	77%	13%
	J F Shields High Sch	100%	75%	25%
	J U Blacksher Sch	91%	89%	2%
Perry County	Monroe Co High Sch	78%	53%	25%
	Booker T Washington Magnet High	98%	98%	0%
	Brewbaker Tech Magnet High Sch	99%	98%	2%
	Carver Senior High Sch	85%	45%	40%
	Entire System	81%	51%	31%
Pickens County	Jefferson Davis High Sch	73%	35%	38%
	Lanier Senior High Sch	83%	49%	34%
	Lee High Sch	70%	33%	36%
	Loveless Academic Magnet Prog	100%	100%	0%
	High Sch			
Pike County	Park Crossing High School	86%	51%	35%
	Albert P Brewer High Sch	92%	70%	22%
	Danville High Sch	93%	74%	18%
	Entire System	94%	76%	18%
	Falkville High Sch	90%	84%	6%
Randolph County	Priceville High Sch	98%	88%	10%
	West Morgan High Sch	96%	74%	22%
	Entire System	95%	60%	35%
	Francis Marion Sch	92%	60%	32%
	Robert C Hatch High Sch	97%	59%	37%
Russell County	Aliceville High Sch	96%	49%	47%
	Entire System	98%	67%	31%
	Gordo High Sch	99%	79%	20%
	Pickens Co High Sch	98%	72%	26%
	Entire System	90%	80%	10%
Russell County	Goshen High Sch	89%	80%	9%
	Pike Co High Sch	91%	80%	11%
	Entire System	90%	72%	18%
	Randolph Co High Sch	90%	64%	26%
	Wadley High Sch	92%	75%	18%
Russell County	Woodland High Sch	88%	82%	7%
	Entire System	88%	62%	26%

Shelby County	Russell Co High Sch	88%	62%	26%
	Calera High	92%	70%	21%
	Chelsea High Sch	96%	89%	7%
	Entire System	95%	86%	8%
	Helena High School	94%	89%	5%
	Montevallo High Sch	91%	80%	11%
	Oak Mt High Sch	98%	94%	4%
	Shelby Co High Sch	91%	84%	7%
St Clair County	Vincent Middle High Sch	93%	81%	12%
	Ashville High Sch	87%	76%	11%
	Entire System	90%	80%	10%
	Moody High Sch	90%	79%	12%
	Ragland High Sch	91%	87%	4%
	Saint Clair Co High Sch	87%	76%	11%
	Springville High Sch	93%	86%	6%
	Entire System	90%	75%	15%
State of Alabama	Entire System	83%	53%	30%
Sumter County	Sumter Central High Sch	83%	53%	30%
Talladega County	BB Comer Memorial High Sch	87%	60%	27%
	Childersburg High Sch	89%	61%	27%
	Entire System	93%	73%	20%
	Fayetteville High Sch	98%	94%	4%
	Lincoln High Sch	91%	66%	25%
	Munford High Sch	97%	91%	6%
	Talladega Co Central High	94%	61%	32%
	Winterboro High Sch	98%	71%	27%
Tallapoosa County	Dadeville High Sch	90%	77%	13%
	Entire System	93%	84%	9%
	Horseshoe Bend High Sch	94%	80%	14%
	Reeltown High Sch	95%	95%	0%
Tuscaloosa County	Brookwood High Sch	89%	81%	8%
	Entire System	87%	71%	16%
	Hillcrest High Sch	91%	71%	19%
	Holt High Sch	77%	52%	25%
	Northside High Sch	96%	83%	13%
	Sipsey Valley High Sch	83%	67%	17%
	Tuscaloosa Co High Sch	83%	67%	17%
	Entire System	90%	81%	10%
Walker County	Oakman High Sch	93%	80%	12%
	Entire System	90%	72%	18%
	Fruitdale High Sch	97%	80%	17%
	Leroy High Sch	95%	74%	21%
	McIntosh High Sch	79%	38%	41%
	Millry High Sch	89%	76%	14%
	Washington Co High Sch	89%	80%	8%
	Entire System	91%	81%	10%
Wilcox County	Wilcox Central High Sch	91%	81%	10%
Winston County	Addison High Sch	88%	84%	4%
	Entire System	84%	80%	5%
	Lynn High Sch	96%	94%	2%
	Meek High Sch	85%	70%	15%
	Winston Co High Sch	73%	73%	0%

System Name	School Name	Graduation Rate	Percent of Seniors College and Career Ready	Gap between Graduation and CCR Rate
Acceleration Day and Evening Academy	Acceleration Day and Evening Acad	62%	19%	43%
	Entire System	62%	19%	43%
Alabaster City	Entire System	97%	92%	5%
	Thompson High School	97%	92%	5%
Albertville City	Albertville High Sch	94%	71%	23%
	Entire System	94%	71%	23%
Alexander City	Benjamin Russell High Sch	89%	88%	1%
	Entire System	89%	88%	1%
Andalusia City	Andalusia High Sch	95%	72%	23%
	Entire System	95%	72%	23%
Anniston City	Anniston High Sch	77%	40%	37%
	Entire System	77%	40%	37%
Arab City	Arab High Sch	94%	95%	-1%
	Entire System	94%	95%	-1%
Athens City	Athens High Sch	90%	91%	0%
	Athens Renaissance School	83%	80%	3%
	Entire System	89%	88%	0%
Attalla City	Entire System	91%	70%	21%
	Etowah High Sch	91%	70%	21%
Auburn City	Auburn High Sch	95%	79%	16%
	Entire System	95%	79%	16%
Bessemer City	Bessemer City High Sch	77%	38%	39%
	Entire System	77%	38%	39%
Birmingham City	Entire System	79%	46%	33%
	Family Court High Sch	0%	4%	-4%
	George Washington Carver High Sch	83%	45%	39%
	Huffman High School-Magnet	80%	38%	42%
	Jackson-Olin High Sch	71%	32%	40%
	Parker High Sch	72%	45%	27%
	Ramsay High Sch	100%	97%	2%
	Wenonah High Sch	78%	42%	36%
	Woodlawn High School-Magnet	76%	36%	40%
Boaz City	Boaz High Sch	90%	74%	16%
	Entire System	90%	74%	16%
Brewton City	Entire System	92%	86%	6%
	TR Miller High Sch	92%	86%	6%
Chickasaw City	Chickasaw City High School	83%	68%	16%
	Entire System	83%	68%	16%
Cullman City	Cullman High Sch	93%	89%	4%
	Entire System	93%	89%	4%
Daleville City	Daleville High Sch	89%	63%	25%
	Entire System	89%	63%	25%
Decatur City	Austin High Sch	86%	64%	22%
	Decatur High Dev	0%	0%	0%
	Decatur High Sch	90%	58%	32%
	Entire System	87%	61%	26%
Demopolis City	Demopolis High Sch	91%	78%	13%
	Entire System	91%	78%	13%
Dothan City	Dothan High Sch	86%	60%	26%
	Entire System	87%	62%	25%
	Northview High Sch	87%	63%	24%
Elba City	Elba High Sch	94%	83%	11%
	Entire System	94%	83%	11%
Enterprise City	Enterprise High Sch	93%	83%	10%

	Entire System	93%	83%	10%
Eufaula City	Entire System	84%	75%	9%
	Eufaula High Sch	84%	75%	9%
Fairfield City	Entire System	84%	54%	29%
	Fairfield High Preparatory Sch	84%	54%	29%
Florence City	Entire System	95%	87%	8%
	Florence High Sch	95%	87%	8%
Fort Payne City	Entire System	97%	91%	7%
	Fort Payne High Sch	97%	91%	7%
Gadsden City	Entire System	84%	65%	19%
	Gadsden City High Sch	86%	66%	20%
Geneva City	Entire System	93%	74%	19%
	Geneva High Sch	93%	74%	19%
Guntersville City	Entire System	95%	86%	9%
	Guntersville High Sch	95%	86%	9%
Haleyville City	Entire System	94%	85%	9%
	Haleyville High Sch	94%	85%	9%
Hartselle City	Entire System	96%	93%	3%
	Hartselle High Sch	96%	93%	3%
Homewood City	Entire System	93%	87%	6%
	Homewood High Sch	93%	87%	6%
Hoover City	Entire System	94%	86%	8%
	Hoover High Sch	93%	85%	7%
Huntsville City	Spain Pk High Sch	96%	86%	10%
	Columbia High Sch	89%	59%	30%
	Entire System	88%	70%	18%
	Huntsville High Sch	90%	77%	13%
	Jemison High School	90%	36%	54%
	Lee High Sch	88%	59%	28%
	New Century Tech High Sch	98%	99%	-1%
	Virgil Grissom High Sch	80%	76%	4%
Jacksonville City	Entire System	89%	74%	16%
	Jacksonville High Sch	89%	74%	16%
Jasper City	Entire System	92%	85%	7%
	Jasper High Sch	92%	85%	7%
Lanett City	Entire System	74%	48%	26%
	Lanett Senior High Sch	74%	48%	26%
Leeds City	Entire System	96%	84%	12%
	Leeds High Sch	96%	84%	12%
Linden City	Entire System	91%	49%	43%
	Linden High Sch	91%	49%	43%
Madison City	Bob Jones High Sch	97%	89%	8%
	Entire System	96%	88%	8%
	James Clemens High School	95%	86%	9%
	Entire System	85%	40%	45%
Midfield City	Midfield High Sch	85%	40%	45%
	Entire System	97%	98%	0%
Mountain Brook City	Mountain Brook High Sch	97%	98%	0%
	Entire System	96%	94%	2%
Muscle Shoals City	Muscle Shoals High Sch	96%	94%	2%
	Entire System	92%	83%	9%
Oneonta City	Oneonta High Sch	92%	83%	9%
	Entire System	88%	72%	16%
Opelika City	Opelika High Sch	88%	72%	16%
	Entire System	90%	95%	-6%
Opp City	Opp High Sch	90%	95%	-6%
	Entire System	94%	74%	20%
Oxford City	Oxford High Sch	94%	74%	20%
	Entire System	94%	74%	20%
Ozark City	Carroll High Sch	91%	76%	15%

Pelham City	Entire System	91%	76%	15%
	Pelham High School	93%	77%	15%
Pell City	Entire System	90%	82%	8%
	Pell City High Sch	90%	82%	8%
Phenix City	Central High Sch	97%	80%	17%
	Entire System	97%	80%	17%
Piedmont City	Entire System	99%	100%	-1%
	Piedmont High Sch	99%	100%	-1%
Roanoke City	Entire System	96%	96%	0%
	Handley High Sch	96%	96%	0%
Russellville City	Entire System	96%	91%	5%
	Russellville High Sch	96%	91%	5%
Saraland City	Entire System	95%	90%	6%
	Saraland High Sch	95%	90%	6%
Satsuma City	Entire System	96%	97%	-1%
	Satsuma City High School	96%	97%	-1%
Scottsboro City	Entire System	90%	89%	1%
	Scottsboro High Sch	90%	89%	1%
Selma City	Entire System	89%	50%	39%
	Selma High Sch	89%	50%	39%
Sheffield City	Entire System	92%	76%	16%
	Sheffield High Sch	92%	76%	16%
Sylacauga City	Entire System	95%	84%	11%
	Sylacauga High Sch	95%	84%	11%
Talladega City	Entire System	89%	72%	17%
	Talladega High Sch	89%	72%	17%
Tallassee City	Entire System	90%	63%	27%
	Tallassee High Sch	90%	63%	27%
Tarrant City	Entire System	77%	38%	39%
	Tarrant High Sch	77%	38%	39%
Thomasville City	Entire System	90%	78%	13%
	Thomasville High Sch	90%	78%	13%
Troy City	Charles Henderson High Sch	94%	75%	19%
	Entire System	94%	75%	19%
Trussville City	Entire System	97%	90%	7%
	Hewitt-Trussville High Sch	97%	90%	7%
Tuscaloosa City	Central High Sch	88%	56%	32%
	Entire System	91%	62%	29%
	Northridge High Sch	94%	71%	23%
	Paul W Bryant High Sch	91%	58%	33%
Tuscumbia City	Deshler High Sch	88%	76%	12%
	Entire System	88%	76%	12%
Vestavia Hills City	Entire System	94%	93%	2%
	Vestavia Hills High Sch	94%	93%	2%
Winfield City	Entire System	93%	77%	16%
	Winfield High Sch	93%	77%	16%

Appendix F. Alabama High Demand Occupations Requiring Associate Degree and Under 2016-26 Projections

SOC	Occupation	2016 Employment	Median Work Keys Scores*			Avg Annual Openings	Avg Annual Salary (2017)
			Applied Math	Workplace Documents	Graphic Literacy		
31-9092	Medical Assistants ☀️	7,360	4	5	4	1,055	\$27,731
29-1141	Registered Nurses	49,210	5	5	4	3,275	\$57,887
31-1011	Home Health Aides ☀️	5,590	3	4	4	960	\$20,728
43-6013	Medical Secretaries	5,160	3	5	4	695	\$32,839
49-9041	Industrial Machinery Mechanics	10,560	4	4	4	1,225	\$50,747
51-2092	Team Assemblers	36,110	3	4	4	5,330	\$34,092
51-4121	Welders, Cutters, Solderers, & Brazers	10,490	3	3	4	1,345	\$39,906
15-1151	Computer User Support Specialists	6,050	4	4	4	545	\$48,528
49-3011	Aircraft Mechanics & Service Technicians ☀️	2,770	4	5	5	355	**
53-7051	Industrial Truck & Tractor Operators	10,410	3	3	3	1,335	\$33,769
31-2021	Physical Therapist Assistants ☀️	1,950	4	4	4	325	\$55,020
49-9021	Heating, Air Conditioning, & Refrigeration Mechanics & Installers	5,700	4	4	4	655	\$40,971
53-7062	Laborers & Freight, Stock, & Material Movers	43,220	3	3	4	6,470	\$25,505
31-9097	Phlebotomists ☀️	2,390	3	4	4	340	\$29,473
53-3032	Heavy & Tractor-Trailer Truck Drivers	35,350	3	4	4	4,055	\$40,077
47-2152	Plumbers, Pipefitters, & Steamfitters	5,460	4	4	4	650	\$42,983
37-3011	Landscaping & Groundskeeping Workers	17,410	3	3	4	2,290	\$25,178
49-9071	Maintenance & Repair Workers, General	16,060	4	4	4	1,735	\$37,902
51-4041	Machinists	6,410	4	4	4	745	\$42,649
41-4012	Sales Representatives, Wholesale & Manufacturing, Except Technical & Scientific Products ☀️	24,700	5	5	4	2,755	\$62,387
49-3031	Bus & Truck Mechanics & Diesel Engine Specialists	4,980	3	4	4	505	\$42,434
17-3026	Industrial Engineering Technicians ☀️	1,080	4	4	4	140	\$58,781
29-1126	Respiratory Therapists	2,430	5	6	5	180	\$48,868
29-2041	Emergency Medical Technicians & Paramedics	4,080	3	5	4	335	\$29,719
43-4051	Customer Service Representatives	31,710	4	4	4	4,340	\$32,977
47-2061	Construction Laborers	10,850	3	4	4	1,215	\$29,364
51-4011	Computer-Controlled Machine Tool Operators, Metal & Plastic	1,990	4	4	4	255	\$37,674
39-9021	Personal Care Aides ☀️	15,870	3	4	4	3,020	\$18,662
35-2014	Cooks, Restaurant	15,750	3	3	4	2,540	\$22,636
41-3021	Insurance Sales Agents	7,140	4	5	5	795	\$78,861
37-2011	Janitors & Cleaners, Except Maids & Housekeeping Cleaners	34,430	3	3	3	4,870	\$22,933
31-9091	Dental Assistants	3,520	3	4	4	475	\$33,493
43-3021	Billing & Posting Clerks	7,000	4	4	4	810	\$33,869
23-2011	Paralegals & Legal Assistants	2,920	3	6	3	350	\$44,740
43-5061	Production, Planning, & Expediting Clerks	2,610	4	4	4	305	\$47,661
29-2052	Pharmacy Technicians	7,320	4	4	4	660	\$29,165
43-5081	Stock Clerks & Order Fillers	23,690	3	4	4	3,240	\$25,359
21-1093	Social & Human Service Assistants	1,660	4	4	4	220	\$26,767
29-2061	Licensed Practical & Licensed Vocational Nurses	13,370	4	4	4	1,070	\$36,829
31-1014	Nursing Assistants	23,840	3	4	4	2,920	\$23,054

* Median Work Keys Scores represent employer identified skills & skill levels (by occupation) required by both current & prospective employees to be successful on the job. Work Keys Scores scale is from one (low skill requirement) to seven (high skill requirement). Source ACT, Inc. (<https://www.act.org>), ACT Job Profiling.

** Data suppressed due to confidentiality. ☀️ Bright Outlook occupations growing over 20% during the projected period.

Source: Alabama Department of Labor, Labor Market Information Division in cooperation with the Projections Managing Partnership & the U.S. Bureau of Labor Statistics.

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