Career Pathways: Accelerating Access to the Middle Class

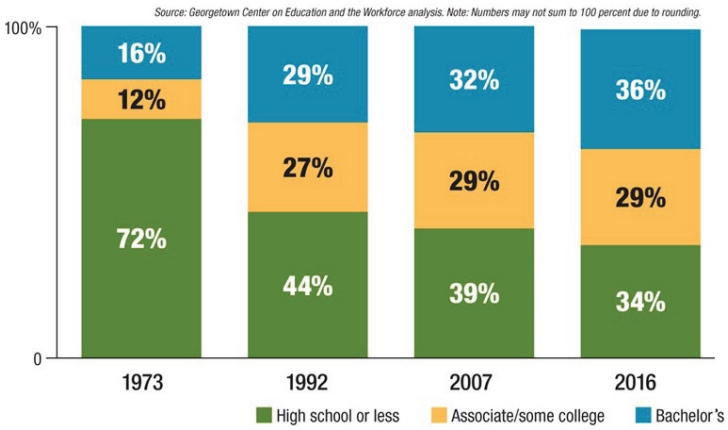
Career pathways and college-ready academics have the power to move more students into the deeper end of the employment pool — and into the middle class.

Gene Bottoms, Senior Vice President, Southern Regional Education Board (SREB)
Kirsten Sundell, Director, Product Development & Communications, Career Pathways, SREB

Since the 1970s, the United States has seen a steady rise in the education needed for a good job. In 1973, 72 percent of all jobs were held by individuals with a high school diploma or less, and 28 percent were held by those with some college. Forty-some years later, our educational and economic landscapes have undergone a seismic shift: In 2016, just 34 percent of all jobs filled since 2010 were held by workers with high school diplomas or less; 65 percent of jobs went to people with associate and bachelor's degrees.

Based on current trends, by the mid-2020s, an even greater percentage of jobs will require some postsecondary education, meaning a credential, certificate, associate or bachelor's degree, or higher.

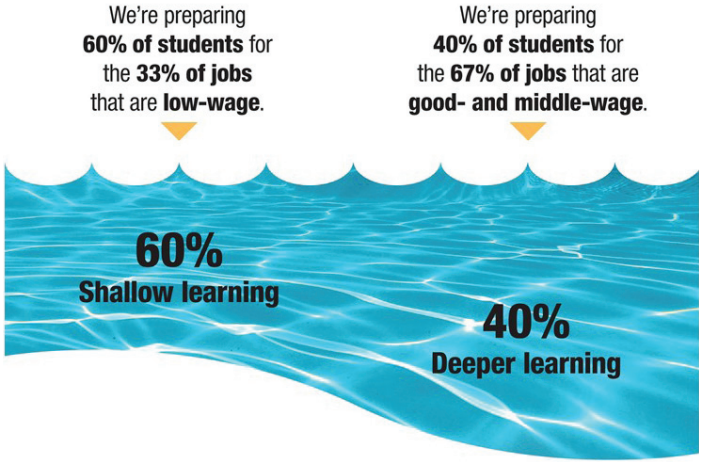
Rise in Education Level for Jobs, 1973 - 2016



In the new economy, good jobs — those paying an annual wage of $52,000 per year or more, often with benefits — mostly go to those with a bachelor's degree or better or highly specialized technical skills. During the recent recovery, 2.9 million of 6.6 million new jobs added to the economy were such good jobs, compared to 1.9 million middle-wage jobs paying between $32,000 and $53,000 and 1.8 million low-wage jobs paying $32,000 or less. Post-recovery, individuals with a high school diploma or less have continued to lose jobs at every wage tier, but especially in the middle- and low-wage categories.

Where is the economy adding jobs? High-wage professional and technical jobs in health care and science, technology, engineering and mathematics (STEM) are in high demand. So too are managerial and professional office jobs. Middle-wage jobs — those requiring some college or an associate degree — are on the rise in business, education, community services, and such "blue-collar" fields as welding, automotive and industrial technology, and highway maintenance. Many new low-wage jobs are in food service, health care, office support, personal services and retail. Low-wage jobs offering good growth and mobility are found in fields like construction, manufacturing, and transportation, distribution and logistics.

Across every industry, individuals need a mix of skills to secure middle- and high-wage jobs. The Business Roundtable convened leading employers to discuss what they look for when hiring. Business leaders described *personal skills*, like dependability and professionalism, as well as *people skills*, like the ability to function on a team and communicate well. *Workplace skills* include the ability to plan, organize and make decisions carefully and use tools and technologies with ease. Finally, business leaders cited a strong need for *applied knowledge* — the foundational literacy, math, science and critical-thinking skills to adapt in the workplace.



SREB | Southern Regional Education Board

What do the educational and economic landscapes look like for our youth?

Just 40 percent of American youth are being taught to college- and career-readiness standards in core academic disciplines. In the middle grades and high school, many students are being tracked into "general" or "basic" English, math, science and social studies classes and outdated career and technical education (CTE) classes with unchallenging assignments that neither enhance students' academic, technical and workplace skills nor nurture the personal qualities employers need.

Most American students may be headed for the shallow end of the employment pool.

As a result, many young people are leaving school unprepared for the rigors of college or the demands of the workplace. A large percentage of those who do enroll in college end up stuck in remedial studies — about 50 percent of first-year community college students test into at least one developmental reading or math course. Many of these students will never finish a certificate or degree. SREB's Commission on Community Colleges reports that, among students assigned to more than one remedial course, less than 10 percent will complete a credential or degree.

Without further education, many young people will spend their 20s in a succession of low-level jobs — or unemployed. Nationwide, 12 percent of youth aged 16 to 24 are unemployed, with much higher rates for minorities — nearly 21 percent for African-American young adults and nearly 13 percent for Hispanic youth. In SREB states, youth unemployment rates are typically higher. Many of the low-wage jobs formerly available to young people with a high school diploma or less and little to no work experience are now being filled by individuals with some college and more work experience. Too few students are graduating ready to pursue and earn advanced industry and postsecondary credentials and degrees in high-demand career fields.

Career Pathways vs. Aspirations: Transcript Outcomes of 2013 Graduates

Source: Education Trust.

Pathway / curriculum completed	% who completed	% who planned bachelor's or higher	% who planned associate or higher
College and Career Ready	8%	77%	11%
College Ready	31%	78%	12%
Career Ready	13%	52%	22%
No Cohesive Curriculum	47%	61%	17%

National data are clear: Educational experiences in the middle grades and high school affect students' readiness for college and careers. The Education Trust examined over 23,000 student transcripts and found that nearly half (47 percent) of all students in the United States completed neither a college-preparatory curriculum (such as a set of college-ready academic courses) nor a career-preparatory curriculum (at least three CTE courses in a pathway, for example). Of these students, 61 percent reported that they planned to pursue a bachelor's degree. Overall, just 8 percent of all students completed a college- *and* career-preparatory curriculum — but 77 percent of them indicated that they planned to pursue a bachelor's degree. Among those who completed *either* a career-ready curriculum or a smorgasbord of non-college and career prep courses, far fewer planned to pursue a bachelor's degree (52 and 61 percent) or an associate degree (22 and 17 percent).

Data from SREB's High Schools That Work network tell a similar story. The table on page 3 compares college readiness outcomes and aspirations for 26,844 HSTW students in 2014. Fifteen percent of HSTW students completed a college-ready academic core *plus* at least four rigorous career pathway courses; 73 percent of these students planned to pursue a bachelor's degree. The *HSTW-recommended college-ready core* is four years of college-prep English, four years of college-prep math and three college-prep lab science courses. SREB defines rigorous career pathway courses as those that cultivate students' academic, technical, technological and workplace readiness skills through project-based instruction and assignments (see the sidebar). Most students who completed a college-ready core plus a rigorous pathway met college-readiness benchmarks in reading (81 percent), math (81 percent) and science (78 percent).

Rigorous Assignments in Career Pathway Courses Require Students to:

1. Perform background research (e.g., read technical articles) to support planning.
2. Predict outcomes based on observations or information.
3. Develop logical arguments.
4. Draw inferences from information.
5. Use math to solve complex problems.
6. Apply academic skills to a career area.
7. Apply technical skills to new situations.
8. Develop and test hypotheses.
9. Complete extended projects that require planning solutions and presenting results orally and in writing.
10. Use software and technology related to a career area to complete assignments.

Career Pathways vs. College Readiness and College Aspirations

	College-ready core + rigorous career pathway	College-ready core + weak career pathway	Weak academic core + career-ready pathway
Completed all of HSTW-recommended academic core	15%	14%	71%
1. Met college-readiness standards			
Reading	81%	64%	40%
Math	81%	64%	50%
Science	78%	62%	45%
2. Percentage with postsecondary aspirations			
BS degree or higher	73%	63%	46%
AA/AS/Postsecondary training	19%	20%	24%

Completing a rigorous career pathway appears to enhance the college readiness of students who complete a college-ready core. SREB examined outcomes for students who completed a college-ready core but a weak career pathway — that is, courses in which students experienced less rigorous assignments — and found both lower educational aspirations and much lower rates of readiness in reading, math and science than students who completed a college-ready core and a rigorous career pathway.

Completing neither a college-ready core nor a rigorous career pathway also hurts students' readiness for college and careers. Among students who completed a weak academic core (e.g., those who took "basic" courses) and weak career pathways, just 46 percent sought a bachelor's degree. Far fewer of these students met readiness benchmarks in reading, math and science than students who completed a college-ready core and a pathway.

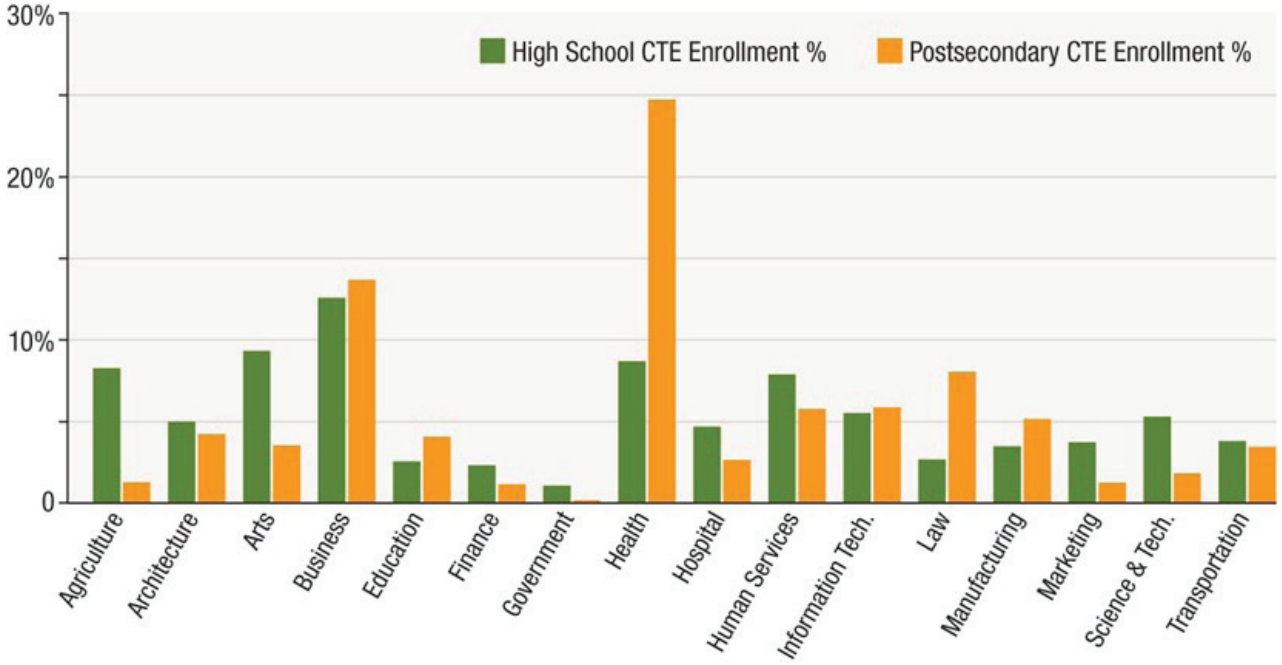
National data show fewer high school students pursuing career pathways to postsecondary studies and employment. In an analysis of high school CTE course-taking data, the National Research Center for Career and Technical Education at SREB found that the number of students completing a concentration of at least three CTE courses has been on the decline since 2007. Eight clusters identified as high-growth occupational areas — like architecture and construction; business management and administration; information technology (IT); manufacturing; and transportation, distribution and logistics — have all experienced declining enrollments, some as steep as 54 percent (IT) and 45 percent (manufacturing). One high-growth exception to this trend is health science.

National data also show a disconnect between high school and postsecondary career pathways and areas of economic growth. The graph on page 4 shows five-year average enrollment percentages by occupational cluster for the period 2011-2015. The largest disconnect is in the high-growth field of health science, which enrolled fewer than 10 percent of high school students but about 25 percent of postsecondary students. SREB educational consultants note that many high school health science programs do not teach an intensive health science curriculum in the context of college-ready academics, which would prepare students to not only acquire a credential — such as a nurse's aide credential, for example — but also master the high-level literacy, math and science skills needed to secure careers as licensed practical nurses, registered nurses and related professions.

CTE enrollment is also low in high school and postsecondary IT programs. SREB's Commission on Computer Science and Information Technology reports that jobs in computer science and IT fields are a large and growing sector of the U.S. economy. By 2020, as many as 4.6 million of 9.2 million STEM jobs will be computer-related. Most — by one estimate, over 70 percent — require a bachelor's degree or more. Computer science and IT jobs also pay well, with an average median salary of $81,430. But Code.org reports that as many as 1 million of these jobs may go unfilled. In the absence of homegrown talent, many businesses are recruiting foreign workers with computer science, IT and STEM skills. SREB's Commission on Computer Science and IT urges states to convene advisory councils that bring together secondary and

postsecondary educators, workforce development agencies, industry leaders, parents and other members of the community around the shared goal of creating or expanding career pathways from high school to college to careers in computer science, cybersecurity and other high-demand fields.

High School vs. Postsecondary CTE Enrollments, 2011-2015 5-Year Average



What are all these data telling us?

First, counselors, teachers and parents are not encouraging high school students to take college-ready academic courses or to pursue career-ready technical studies. Advisement systems must encourage *all* students to complete a college-ready core *in addition* to a concentration, which would be (a) a career pathway consisting of four or more courses leading to college credentials and degrees in high-demand fields, (b) a selection of Advanced Placement (AP), International Baccalaureate (IB) or honors courses aligned with their intended college major, or (c) a mix of both career pathway courses and AP, IB and honors courses.

Second, much work remains to align intellectually rigorous career pathways with rising labor market demand in fields like advanced manufacturing, computer science, IT and even business. High school, postsecondary and employer partners share responsibility for creating structured career pathways that show young people how their high school courses lead to advanced credentials and associate and bachelor's degrees. Working with these partners, states need to prioritize the development of pathways in fields that matter to their economies. This means establishing criteria for redesigning pathways that no longer prepare individuals for good jobs and infusing existing pathways with rigorous assignments that enhance students' academic, technical, technological, critical-thinking and employability skills. *Credentials for All*, the report of SREB's Commission on Career and Technical Education, offers strategies for building career pathways that blend college-ready academics with challenging technical studies and put more students on a fast track to credentials, degrees and good jobs.

Steps States Can Take to Build Career Pathways to the Middle Class

We believe that career pathways and college-ready academics have the power to move more students into the deeper end of the employment pool — and into the middle class.

SREB's **High Schools That Work model** transforms high schools by connecting secondary and postsecondary studies with workplace learning. At its heart is a redesigned senior year that blends a college-ready academic core with career pathway courses taught through project-based instruction and assignments. Schools can adopt the model as a wall-to-wall career academy design.

Three broad career pathway options featuring dual enrollment courses allow students to graduate with up to two semesters of college credits (or 30 credit hours) toward an associate or bachelor's degree. Dual enrollment courses are *taught on the same schedule* as at the college using college syllabi, tests and materials, with time built in for students to complete labs, internships and capstones.

- HSTW's **Ready** option puts underprepared students on a path to college studies. Schools use state readiness assessments to identify ninth- and 12th-graders who need extra help meeting literacy and math benchmarks. Specialized ninth and 12th-grade readiness courses help students meet benchmarks and graduate with up to 15 hours of college credit.
- HSTW's **Accelerated** option allows prepared seniors to complete graduation requirements and up to two semesters of college courses toward an associate degree.
- HSTW's **Accelerated+** option allows seniors to earn credits toward a four-year bachelor's degree.

In all pathway options, academic and career pathway teachers work together to integrate instruction and project-based assignments; all students engage in career counseling and in experiential learning such as job shadowing, service learning or internships. Pathway courses and college courses are offered by certified high school teachers or by college faculty at the high school, online or at the college.

The new HSTW model is designed to help states double the percentage of young people who earn a credible credential or degree before the age of 25. Kentucky, Oklahoma, Tennessee and West Virginia have already started the journey to reshape the senior year of high school through quality career and technical studies.

Many states are also studying their career pathway systems and taking steps to strengthen them. For example, eight SREB states number among the 24 states that received career pathway planning grants from JPMorgan Chase and its partners, the Council of Chief State School Officers (CCSSO) and AdvanceCTE, the association of state CTE directors. Grant recipients are working with organizations like SREB to conduct intensive needs assessments of their education and workforce training systems.

HSTW's Redesigned Framework

In HSTW sites, all students:

- Complete a **career pathway** of four or more courses taught in the context of a **college-ready academic core.**
- Master college- and career-ready **literacy and math skills.**
- Receive **extra time and support** to achieve readiness.
- Have access to **ninth- and 12th-grade readiness courses** that help them meet grade-level literacy and math benchmarks.
- Complete **real-world project-based assignments** that blend academic, technical and workplace skills.
- Participate in a series of **work-based learning experiences** that build skills and encourage career exploration.
- Receive **high-quality career guidance and counseling** that helps them make informed choices about careers and college.
- Spend their senior year taking **college-level courses** that put them on a fast track to earning an advanced credential or degree.
- Learn within a **culture of continuous improvement** in which all school personnel commit to increasing college and career readiness.

SREB strongly advises states to conduct needs assessments to determine whether their existing pathways align with postsecondary studies and high-demand careers.

Following the CCSSO model, needs assessments should determine if state career pathway systems:

- Are informed by real-time labor market data
- Use policies and funding incentives to improve the quality and rigor of career pathways
- Include accountability measures that capture pathway outcomes
- Feature scaled pathways that culminate in a postsecondary or industry credential of value
- Align varied state and federal funding streams
- Foster cross-institutional collaboration among education, industry and community partners

Other steps states can take to build career pathways to the middle class:

- **Align high school and postsecondary pathways with high-demand, high-paying career fields.** States need access to reliable, real-time education, employment and workforce data. Longitudinal data systems can help states assess pathway quality and better align their pathways with workforce needs, now and in the future. States can use these data to determine which career pathways to fund, redesign or retire. In **Delaware**, new career pathways must demonstrate alignment with good job opportunities to qualify for set-aside funding.

- **Reconfigure the senior year of high school to allow students to earn an advanced industry credential and significant college credits toward an associate or bachelor's degree.** Students who meet literacy and math readiness benchmarks take challenging college-level courses while completing academic requirements for graduation and continuing to enjoy high school activities. Ninth- and 12th-grade readiness courses help struggling students get on track for college-level studies. States can offer accelerated pathways in career academies, early college high schools, two- and four-year colleges, technical high schools, shared-time tech centers and online or blended learning programs.

- **Redesign middle grades and high school assignments in all core academic and career pathway courses to align with grade-level college- and career-readiness standards.** Challenging, project-based assignments are critical to student success. In a project-based approach, teachers encourage students to take ownership of their learning and apply a range of academic, technical, technological, cognitive and workplace skills to solve real problems. **SREB's Advanced Career curricula** were explicitly designed to help students master these skills through project-based assignments. Employer partners not only help shape the content of these assignments, they also mentor AC students and judge their work. Between 85 percent and 90 percent of AC students perceive their classes as rigorous and demanding.

- **Create strong career and college counseling programs that show students the many routes to further education and fulfilling careers.** In curriculum-based teacher advisement systems, teachers and counselors work together to design lessons that help students understand their career interests, plan their courses and identify a focus for postsecondary studies.

- **Transform low-performing high schools into career-preparatory cultures.** All students should be prepared for a full range of postsecondary options, including two- and four-year colleges, technology centers and learn-and-earn programs. In career-preparatory schools, all students take a college-ready core plus four or more pathway courses taught through project-based assignments. *Credentials for All* and the new HSTW model offer powerful solutions for transforming schools.

- **Reform middle grades schools using recommendations in *A New Mission for the Middle Grades*.** This report of the SREB Middle Grades Commission offers goals and strategies for preparing students for high school and postsecondary studies. Strategies include focusing the curriculum on literacy and STEM disciplines and requiring students to complete academic and career plans.

- **Establish accountability systems that value both college and career readiness.** States need to set expectations for what it means to be academically college-ready as well as academically and technically career-ready. Multi-measure accountability systems value career readiness by including outcomes that matter regardless of whether high school graduates immediately transition to higher education or enter the workforce. Such outcomes include the percentage of high school students who:
  - meet academic college-readiness benchmarks or academic and technical career-readiness benchmarks, with bonus points for meeting both
  - demonstrate readiness by acquiring industry credentials, completing capstone courses, earning dual credits or passing end-of-course assessments for college credit
  - complete pathways consisting of a college-ready core and at least four career pathway courses
  - immediately transition to postsecondary programs of any kind

Kentucky awards one point for each student who meets (a) college-ready academic benchmarks or (b) career-ready academic and technical benchmarks. Schools earn a bonus half-point for each student who meets both college-ready academic *and* career-ready technical benchmarks. Since adopting this model, Kentucky has seen a significant increase in the percentage of students meeting college- *and* career-ready benchmarks — from 34 percent in 2010 to 67 percent in 2015. And in contrast to national trends toward declining enrollment, the number of Kentucky students in career concentrations has increased. Education-industry partnerships in high-demand fields are also on the rise, spurring the creation of a full-time technical high school, a pre-apprenticeship program and career academies statewide.

Kentucky's College- and Career-Readiness Accountability Measures

College Ready *(1 Point)* A student must meet benchmarks on one of the following	**Career Ready** *(1 Point)* A student must meet benchmarks on one from each of the following columns		**College & Career Ready** *(1.5 Points)* A Student must meet benchmarks on one from each of the following columns	
	Career Ready Academic	Career Ready Technical	College Ready Academic	Career Ready Technical
ACT or COMPASS or KYOTE	ASVAB or WorkKeys	KOSSA or Industry Certificate	ACT or COMPASS or KYOTE	KOSSA or Industry Certificate

Closing the Gap with Career Pathways

Rising workplace requirements mean that our young people face serious competition for well-paying jobs from better-educated individuals and even foreign workers. To compete, young people need deeper educational and workplace experiences that equip them with the lifelong learning skills they need to secure — and sustain — a middle-class way of life.

Simply put, our existing educational system is not keeping pace with these rising requirements. It is well past time to address growing skills gaps in fields like advanced manufacturing, business, computer science, health care and STEM. Our national economy and security demand it.

Career pathways offer a solution to the skills gap because they challenge students to solve real-world problems by harnessing college-ready academic knowledge and hands-on technical, technological and workplace skills. Career guidance and counseling empowers students to understand and explore their interests and aptitudes, then create customizable road maps to their postsecondary and career goals.

Career pathways offer a solution to the skills gap because they challenge students to solve real-world problems by harnessing college-ready academic knowledge and hands-on technical, technological and workplace skills.

Implementing career pathways will be a heavy lift. Government agencies, high school and college educators, and employer partners will need to collaborate and share finite resources. Teachers will need many hours of professional development to master the best practices of student-centered, project-based instruction. Schools will need to devote resources to help all students complete a college-ready curriculum and offer support to those who fall short of readiness benchmarks. High schools and two- and four-year postsecondary institutions will need to work together to put more students on an accelerated path to valuable credentials and degrees. The time to take on this heavy lift is *now*, before we lose another promising young person to 10 years or more of unemployment or underemployment.

We can help. SREB offers technical assistance to states, districts, schools and technology centers seeking to design their own career pathways, adopt SREB's Advanced Career curricula or create career academies leading to 21st-century labor market opportunities. Contact **gene.bottoms@sreb.org** to learn more.

SREB
Southern Regional Education Board
592 10th St. N.W.
Atlanta, GA 30318
(404) 875-9211

We can prepare students for college and career success.

16V18
AUGUST 2016

Career Pathways: Accelerating Access to the Middle Class

SREB | Southern Regional Education Board