Progress is Stalled:
Career Pathways: Accelerating Access to the Middle Class

Presentation to:
North Carolina House Select Committee on Education Strategy and Practices

Gene Bottoms, SREB Senior Vice President
Gene.Bottoms@SREB.org
Better alignment between state workforce opportunities and college and career readiness is needed now.

Since the 1970s, the U.S. has seen a steady rise in the education needed to obtain a good job.

Based on current trends, by 2020, 67 percent of all jobs in North Carolina will require some postsecondary education and training that leads to advanced credentials — i.e., associate or bachelor’s degrees or higher.

Source: George Washington University
Rise in Education Levels for Jobs

1973 to 2016

Source: Georgetown Center on Education and the Workforce analysis. Note: Numbers may not sum to 100 percent due to rounding.
Jobs Added in the Economic Recovery

Good jobs account for 44%. Low-wage jobs stand at 29% (2010-2014)

Source: Georgetown University Center on Education and the Workforce analysis of Current Population Survey data, 2010-2014
Areas Representing the Majority of Good Jobs

Employment change in high-wage occupations, 2010-2014

Source: Georgetown University Center on Education and the Workforce analysis of Current Population Survey data, 2010-2014
Areas with Majority of **Middle- and Low-Wage Jobs**

*Job growth recovery, 2010-2014*

Source: Georgetown University Center on Education and the Workforce analysis of Current Population Survey data, 2010-2014

- Food, personal services, sales & office support: Middle-wage 1,053,000, Low-wage 860,000
- Blue-collar: Middle-wage 573,000, Low-wage 139,000
- Healthcare: Middle-wage 196,000, Low-wage 7,000
- Managerial & professional office: Middle-wage 267,000, Low-wage 120,000
- STEM: Middle-wage 0, Low-wage -47,000
- Education & community services: Middle-wage 558,000, Low-wage -47,000
## North Carolina Annual Openings for Good Jobs, Middle-Wage Jobs

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Architecture &amp; Construction</td>
<td>14,221</td>
<td>33%</td>
<td>67%</td>
<td>3,966</td>
<td>2,589</td>
<td>6,555</td>
<td>-7,666</td>
</tr>
<tr>
<td>Business, Management &amp; Administration</td>
<td>22,503</td>
<td>50</td>
<td>50</td>
<td>3,806</td>
<td>8,811</td>
<td>12,617</td>
<td>-9,886</td>
</tr>
<tr>
<td>Finance</td>
<td>6,189</td>
<td>25</td>
<td>75</td>
<td>388</td>
<td>135</td>
<td>523</td>
<td>-5,666</td>
</tr>
<tr>
<td>Health Science</td>
<td>18,812</td>
<td>31</td>
<td>69</td>
<td>5,969</td>
<td>135</td>
<td>6,104</td>
<td>-12,708</td>
</tr>
<tr>
<td>Human Services</td>
<td>1,359</td>
<td>100</td>
<td>0</td>
<td>1,098</td>
<td>1,750</td>
<td>2,848</td>
<td>1,489</td>
</tr>
<tr>
<td>Information Technology</td>
<td>1,958</td>
<td>20</td>
<td>80</td>
<td>2,219</td>
<td>4,726</td>
<td>6,945</td>
<td>4,987</td>
</tr>
<tr>
<td>Law, Public Safety, Corrections &amp; Security</td>
<td>2,488</td>
<td>40</td>
<td>60</td>
<td>537</td>
<td>5,438</td>
<td>5,975</td>
<td>3,527</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>9,451</td>
<td>100</td>
<td>0</td>
<td>468</td>
<td>6,345</td>
<td>6,813</td>
<td>-2,638</td>
</tr>
<tr>
<td>Marketing</td>
<td>776</td>
<td>0</td>
<td>100</td>
<td>395</td>
<td>5,083</td>
<td>5,478</td>
<td>4,702</td>
</tr>
<tr>
<td>STEM (Including Computer Science)</td>
<td>7,688</td>
<td>0</td>
<td>100</td>
<td>1,445</td>
<td>296</td>
<td>1,741</td>
<td>-5,947</td>
</tr>
<tr>
<td>Transportation, Distribution &amp; Logistics</td>
<td>2,109</td>
<td>80</td>
<td>20</td>
<td>748</td>
<td>614</td>
<td>1,362</td>
<td>-747</td>
</tr>
</tbody>
</table>

The Great Skill Mismatch

*Job Openings Rise, Hiring Slows*

Looking for Jobs  Help Wanted
What is the problem?

We’re preparing 60% of students for the 33% of jobs that are low-wage.

We’re preparing 40% of students for the 67% of jobs that are good- and middle-wage.

60% Shallow learning

40% Deeper learning

SREB
Median Percentage of Eighth-Graders in SREB States Proficient and Above in Reading and Math

<table>
<thead>
<tr>
<th></th>
<th>Reading</th>
<th>Math</th>
</tr>
</thead>
<tbody>
<tr>
<td>SREB States</td>
<td>30%</td>
<td>27%</td>
</tr>
<tr>
<td>North Carolina</td>
<td>30</td>
<td>33</td>
</tr>
<tr>
<td>United States</td>
<td>33</td>
<td>32</td>
</tr>
</tbody>
</table>

Source: NAEP Assessment 2015
STEM-Interested Seniors Who Met ACT’s College-Readiness Benchmarks in North Carolina
By Racial/Ethnic Group, 2015

- **White**: 47% Science, 40% Math
- **Hispanic**: 19% Science, 26% Math
- **Black**: 10% Science, 15% Math

*Source: ACT, Inc.*
## Median Percentage of Students in SREB States Meeting ACT College-Ready Benchmarks

<table>
<thead>
<tr>
<th></th>
<th>N. C.</th>
<th>SREB</th>
<th>U.S.</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>47%</td>
<td>58%</td>
<td>64%</td>
</tr>
<tr>
<td>Reading</td>
<td>34</td>
<td>41</td>
<td>46</td>
</tr>
<tr>
<td>Science</td>
<td>26</td>
<td>32</td>
<td>38</td>
</tr>
<tr>
<td>Math</td>
<td>32</td>
<td>36</td>
<td>42</td>
</tr>
<tr>
<td>Met all four</td>
<td>18</td>
<td>22</td>
<td>28</td>
</tr>
<tr>
<td>Percentage of students</td>
<td>100</td>
<td>69</td>
<td>59</td>
</tr>
<tr>
<td>taking ACT exams</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: ACT Assessment, 2015
# Unemployment Rates of Three Groups

*Select SREB states, 2015*

<table>
<thead>
<tr>
<th>State</th>
<th>Under Age 25</th>
<th>All Workers</th>
<th>Adults PS Certified</th>
</tr>
</thead>
<tbody>
<tr>
<td>State A</td>
<td>10%</td>
<td>4%</td>
<td>7%</td>
</tr>
<tr>
<td>State B</td>
<td>13%</td>
<td>5%</td>
<td>15%</td>
</tr>
<tr>
<td>State C</td>
<td>15%</td>
<td>6%</td>
<td>8%</td>
</tr>
<tr>
<td>State D</td>
<td>16%</td>
<td>6%</td>
<td>4%</td>
</tr>
<tr>
<td>State E</td>
<td>15%</td>
<td>6%</td>
<td></td>
</tr>
</tbody>
</table>

*Source: Bureau of Labor Statistics*
Employment Rates for Adults, Ages 25 to 64, Without a Postsecondary Credential In North Carolina, 2014

- 67% with a high school credential
- 54% without a high school credential (U.S.)
- 65% with a high school credential
- 51% without a high school credential (SREB)
- 65% with a high school credential
- 51% without a high school credential (NC)

Source: U.S. Census Bureau
Unemployment Rate by Educational Attainment 25+, U.S. and N.C., 2015

- Less than HS: 14.50% U.S., 12.40% N.C.
- HS/GED: 10% U.S., 8.80% N.C.
- Some College: 9% U.S., 7.60% N.C.
- Associate's Deg.: 6.70% U.S., 5.90% N.C.
- Bachelor's and Higher: 2.80% U.S., 3.15% N.C.

Source: IPUMS-USA, analysis limited to individuals 25% in civilian labor force.
Educational Attainment varies by Race/Ethnicity and Nativity

Percentage of NC adults 25 and older with a bachelor’s degree or higher, 2014

- White: 32% Native, 44% Foreign-Born
- Black: 19% Native, 34% Foreign-Born
- Asian: 49% Native, 53% Foreign-Born
- Hispanic: 26% Native, 9% Foreign-Born

Source: 2014 American Community Survey via IPUMS-USA
Percentage of Working-Age Adults With Associate Degrees or Higher, By Race/Ethnic Group in North Carolina, 2014

Source: U.S. Census Bureau
North Carolina Secondary and Postsecondary CTE Concentrators by Cluster: Average Percentage for 2007/08 to 2014/15
High school career pathways must be aligned with postsecondary and workforce opportunities.

The number of students choosing CTE career clusters has declined since 2007, especially in high-demand clusters.

There is a disconnect between career pathway enrollments and labor market opportunities.

There are disparities between high school CTE concentrations and postsecondary career clusters.
Too many students are headed for the shallow end of the employment pool.

Why?
### Pathways vs. Expectations

*National transcript outcomes of 2013 HS graduates*

<table>
<thead>
<tr>
<th>Pathway / curriculum completed</th>
<th>% who completed</th>
<th>% who planned bachelor’s or higher</th>
<th>% who planned associate or higher</th>
</tr>
</thead>
<tbody>
<tr>
<td>College and Career Ready</td>
<td>8%</td>
<td>77%</td>
<td>11%</td>
</tr>
<tr>
<td>College Ready</td>
<td>31%</td>
<td>78%</td>
<td>12%</td>
</tr>
<tr>
<td>Career Ready</td>
<td>13%</td>
<td>52%</td>
<td>22%</td>
</tr>
<tr>
<td>No Cohesive Curriculum</td>
<td>47%</td>
<td>61%</td>
<td>17%</td>
</tr>
</tbody>
</table>

*Source: Education Trust.*
## Career and Technical Education Concentrations

*High Schools That Work schools, 2014*

<table>
<thead>
<tr>
<th></th>
<th>College-ready core + Rigorous career pathway</th>
<th>College-ready core + Weak career pathway</th>
<th>Weak academic core + Career-ready pathway</th>
</tr>
</thead>
<tbody>
<tr>
<td>Completed all of HSTW-recommended academic core</td>
<td>15%</td>
<td>14%</td>
<td>71%</td>
</tr>
<tr>
<td>1. Met college-readiness standards</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reading</td>
<td>81%</td>
<td>64%</td>
<td>40%</td>
</tr>
<tr>
<td>Math</td>
<td>81%</td>
<td>64%</td>
<td>50%</td>
</tr>
<tr>
<td>Science</td>
<td>78%</td>
<td>62%</td>
<td>45%</td>
</tr>
<tr>
<td>2. Percentage with postsecondary aspirations</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BS degree or higher</td>
<td>73%</td>
<td>63%</td>
<td>46%</td>
</tr>
<tr>
<td>AA/AS/Postsecondary training</td>
<td>19%</td>
<td>20%</td>
<td>24%</td>
</tr>
</tbody>
</table>
Middle-size school districts in North Carolina: Survey of career-focused seniors in Spring of 2016

<table>
<thead>
<tr>
<th>Post-Secondary Aspirations</th>
<th>College-Ready Core without CTE Concentration (%)</th>
<th>CTE Concentration without College-Ready Core (%)</th>
<th>No College-Ready Core or CTE Concentration (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total (511 Students)</td>
<td>2% (10 students)</td>
<td>30% (152 students)</td>
<td>68% (349 students)</td>
</tr>
<tr>
<td>Career and technical education, trade or advanced industry credential</td>
<td>0%</td>
<td>7%</td>
<td>9%</td>
</tr>
<tr>
<td>Associate’s degree (or other 2-year program)</td>
<td>0</td>
<td>19</td>
<td>13</td>
</tr>
<tr>
<td>Bachelor’s degree or higher</td>
<td>78</td>
<td>70</td>
<td>71</td>
</tr>
</tbody>
</table>

Based on a survey of 511 students from six high schools.
High School Graduation Rates in North Carolina, 2014

<table>
<thead>
<tr>
<th>Nat'l</th>
<th>SREB Median 2012</th>
<th>NC</th>
<th>Hispanic</th>
<th>Black</th>
<th>White</th>
<th>Low Income</th>
<th>ELL</th>
<th>SWD</th>
</tr>
</thead>
<tbody>
<tr>
<td>80%</td>
<td>80%</td>
<td>84%</td>
<td>77%</td>
<td>80%</td>
<td>87%</td>
<td>78%</td>
<td>52%</td>
<td>64%</td>
</tr>
</tbody>
</table>

ELL: English Language Learners  SWD: Students with Disabilities
Postsecondary Enrollment Rates of Recent High School Graduates in North Carolina, Fall 2014

69% 70%

64,036 enrollees = 70%
92,035 graduates

Source: SREB, based on data from states and the National Center for Education Statistics
Educational Attainment of Adults, Ages 25 and Over, In North Carolina, 2014

- No high school credential: 902,726 (14%)
- High school credential, no postsecondary credential: 1,772,285 (27%)
- Postsecondary credential: 2,526,956 (38%)
- Some postsecondary, no credential: 1,459,970 (22%)

Note: The sum of categories does not equal 100 percent, due to rounding.

Source: U.S. Census Bureau
The road to the **middle class** begins with:

1. Increasing greatly the **college- and career-readiness** of high school graduates

2. Structuring **career pathway programs** that
   • span high school and postsecondary studies
   • align with good career opportunities
   • are combined with a college-ready academic core
What is Advanced Career?

- Advanced Career (AC) is eight ready-to-implement curricula made up of four courses each.
- Courses focus on preparing students for college and careers by engaging them in applying academic and technical knowledge and technology to complete work-related assignments.
Leading Industry Sectors in N. C.
Why Develop the Advanced Career Curricula?

- Prepare students for a double purpose.
- Model assignments that require students to apply a blend of — academic, thinking, technical, technology and team skills.
- Introduce students to career opportunities (often unknown to them).
- Create career pathway programs of study that blend a college-ready core with career studies.
Anatomy of an AC Project

Students apply the seven-step Engineering Design Process (EDP) to complete each project.

- Ask / Inquire
- Imagine
- Plan
- Create
- Experiment / Evaluate
- Improve
- Communicate
Advanced Career Integrated Production Technologies (Advanced Manufacturing)

Projects Engage Students in Solving Real-World Challenges

EQ. How can we design a logic control process to improve an automated manufacturing process?
Advanced Career
Clean Energy Technology

Projects Engage Students in Solving Real-World Challenges

EQ. How can we design a device to use radiant heat to heat water in our homes?
Advanced Career Energy and Power

Projects Engage Students in Solving Real-World Challenges

EQ. How can we design a mini-hydroelectric system for homes and farms?
Advanced Career Aerospace Engineering

Projects Engage Students in Solving Real-World Challenges

EQ: How can your team make an assembly of parts so that they fit and function properly within a larger system of parts?
Advanced Career Business Informatics

Projects Engage Students in Solving Real-World Challenges

EQ. How can we design a system to better track inventory and make purchasing decisions?
Advanced Career Innovations in Science and Technology

Projects Engage Students in Solving Real-World Challenges

EQ. How can we determine which contaminates impact drinking water quality, and how can we remove them?

Course content examples:
- Essential Science & Technology Concepts
- Scientific Inquiry & the Engineering Design Process
- Trend Analysis & Forecasting
- Patents & Trademarks; Design Under Constraints
- Cost Analysis & Budget Assessment
- Real-World Projects Involving Complex Systems
Advanced Career Student Survey 2015

- 72% of AC students say that this AC course helped them in determining a career goal after high school
- 88% of AC students find the AC course rigorous
- 80% of AC students like the blend of hands-on activities, academics and creative thinking in the AC class
- 77% of AC students would recommend this course to a friend
- Over 70% of AC students report frequently using reading, writing and mathematics to complete assignments

AC pathways draw a mainstream group of students

Over 81% of AC students plan to take all four AC courses
### CTE Student Assignments Matter

Comparison of perceptions of AC students with those taking regular assignments

<table>
<thead>
<tr>
<th>Students Perceptions of Assignment Rigor</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Students taking AC courses</td>
<td>88%</td>
</tr>
<tr>
<td>Students taking regular CTE courses</td>
<td>30</td>
</tr>
</tbody>
</table>

Source: 2016 Survey of students taking Advanced Career courses and students taking regular CTE courses
Skills Most Needed to Succeed in a Changing Workforce

APPLIED KNOWLEDGE
- Reading
- Writing
- Mathematics
- Science
- Technology
- Critical Thinking

PERSONAL SKILLS
- Integrity
- Initiative
- Dependability & Reliability
- Adaptability
- Professionalism

PEOPLE SKILLS
- Teamwork
- Communication
- Respect

WORKPLACE SKILLS
- Planning & Organizing
- Problem Solving
- Decision Making
- Business Fundamentals
- Customer Focus
- Working with Tools & Technology

SREB
Status of Implementation of Advanced Career Curricula
Fall 2016

States Adopting AC High School Curricula

Developed by SREB’s High Schools That Work
in partnership with states and industry
SREB.org/AC
Eight AC Curricula • 32 courses • 180 projects
Actions states can take to accelerate the process

Six Areas of Focus

Addressed by state needs assessments for career pathways

1. Labor market data
2. Rigor and quality in career pathway programs of study for all students
3. Career-focused accountability system
4. Scaled pathways that culminate in credentials of value
5. Alignment of state and federal funding streams
6. Cross-institutional alignment
Accelerate the Pace: **Redesign Senior Year**

*Blend high school and postsecondary studies*

1. **Allow** students to earn 30 hours of college credit
2. **Blend** college ready core with career studies
3. **Retain** the senior-year high school experience
4. **Personalize** the design for:
   - Earning an advanced credential
   - Earning 30 hours toward an associate or bachelor’s degree
   - Creating a transitional bridge between high school and postsecondary education.
Accelerate the Pace: **Give Accountability Points**

*Award them to each career pathway student who:*

- **Completes a true** in college-preparatory courses at grade 9
- **Completes a true college-ready core** and at least 4 quality courses in a career pathway program of study
- **Meets college readiness standards** in literacy and math or meets **career academic readiness** standards in literacy and math (KY)
- **Meets technical readiness standards** by acquiring a credible industry credential that earns significant credit toward an advanced postsecondary credential or degree (FL)
- **Earns** 30 semester hours of college credit in an advanced credential AS or AAS in a critical industry sector
Accelerate the Pace: **Give Accountability Points**

*Award them to high schools that:*

- **Adopt new career pathway programs** aligned to critical industry sectors (DE), (WV AC), (Washington, DC, all Perkins dollars)
- **Redesign existing pathways** to reflect changing workplace requirements and provide more advanced postsecondary credits (TN)
- **Redesign the senior year** so it leads to an advanced credential or significant credit toward an associate or bachelor’s degree (GA)
## Kentucky College & Career Readiness 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 |

SREB
Kentucky Career Ready: **Accelerating Change**

<table>
<thead>
<tr>
<th>College and Technical Career Ready</th>
<th>Academic and Technical Career Ready Only</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011-2012</td>
<td>2011-2012</td>
</tr>
<tr>
<td>13%</td>
<td>8%</td>
</tr>
<tr>
<td>2012-2013</td>
<td>2012-2013</td>
</tr>
<tr>
<td>18%</td>
<td>12%</td>
</tr>
<tr>
<td>2013-2014</td>
<td>2013-2014</td>
</tr>
<tr>
<td>27%</td>
<td>18%</td>
</tr>
<tr>
<td>33%</td>
<td>21%</td>
</tr>
</tbody>
</table>
Kentucky half-point Bonus: Accelerating Readiness for Career-Oriented Students

- Administrators, counselors, and teachers provide students with a program of study that includes:
  - a college-prep academic core
  - a four-course sequence of CTE courses

- CTE teachers are trained to design more rigorous assignments with embedded applied academics.
North Carolina Credentials Earned
2014-2015

- Total credentials earned — 130,611
  - At least 113,000 failed to meet SREB’s criteria
- Measuring for Technical skills
  - WorkKeys is a measure of career academic readiness. Many current program exams are end-of-course exams or units.
- First aid and CPR are not industry credential exams.
- No evidence of postsecondary credit awarded for earning credentials.
- Need to bundle several course- or unit-level exams into an end-of-program exam

SREB
Accelerating Readiness: Fix Low-Performing Middle Grades and High Schools

- **Redesign** low-performing high schools with rigorous pathways that
  - align with a college-ready academic core
  - lead to postsecondary credentials that help secure good jobs

- **Restructure** low-performing high schools to include elements in the “Credentials for All” report • See pages 25-27. SREB.org/CTECommission

- **Reform** middle schools feeding into low-performing high schools using “A New Mission for the Middle Grades” report

- **Align** students’ assignments with grade-level work

- **Create** a strong career and college counseling program
SUMMARY

Accelerate the Pace of Change by:

- **Redesigning assignments** in the middle grades and high school in all core academic courses to state college- and career-readiness standards

- Establishing an **accountability system** that values both college- and career-readiness standards

- Using SREB’s **CTE commission report** as a framework for redesigning low-performing middle grades and high schools. See pages 25-27.
SUMMARY | Accelerating Access to the Middle Class

- Align more high school and postsecondary pathways to **high-demand** and **high-paying** career fields
- Combine a **college-ready core** with a **career pathway** program of study — double purpose
- Redesign the senior year to allow prepared students to earn an **advanced credential** or **significant credit** toward a AA/AS/BS degree.
What is the problem?

We’re preparing 60% of students for the 33% of jobs that are low-wage.

We’re preparing 40% of students for the 67% of jobs that are good- and middle-wage.

60% Shallow learning

40% Deeper learning
A vision for new high schools that **work:**

Accelerate Depth of Literacy and Math Instruction with Intellectually Demanding Career Pathway Courses Designed to:

*Connect high school, postsecondary studies and the workplace*
Five Elements of SREB’s PD for Literacy and Math

1. Develop capacity of teachers
2. Develop district/regional trainers.
3. Conduct classroom observations and provide feedback.
4. Engage principals in literacy/math PD
5. Provide web-based courses to support spread
Number of Schools Participating in Literacy and Math PD — 2016-2017

Note: FL, KY, TN are direct investment states. SREB is not targeting these states for LDC/MDC state rollout.
SREB Three-Year PD Plan

- **Year 1** — four literacy and two math teachers per school, eight days of PD

- **Years 2 & 3** — spread literacy-based assignments and formative assessment lessons (FALs) to all teachers

- **Years 1, 2, 3** — provide special PD for principals

- **Years 1, 2, 3** — provide special PD for local trainers
Literacy Goal

- Increase students’ abilities to comprehend and analyze grade-level texts and related documents and express their understanding orally and in writing in all subject areas.
Focus of SREB Literacy Professional Development Involves

Teachers using a planning process to:

- Develop **three or four** major assignments in science, social studies, English/language arts, and career and technical education (CTE).
- Engage students in applying literacy standards (**reading, writing, speaking**) to master content standards in academic and CTE courses.
Science-Based Literacy Assignment

How has the spread and treatment of infectious diseases evolved over the last 100 years?

- After reading informational texts related to microbiology, write an essay that compares the differences in the spread and treatment of infectious diseases over the past 100 years.
- Support your discussion with evidence from the texts.

Greta Browning and Jacki Clark, ninth-grade science teachers
Table Rock Middle School, Burke County, North Carolina
“Creating literacy-based assignments has enabled me to teach my students the skills required to read grade-level texts and to paraphrase the information learned into their own words. For example, my sixth-grade students were academically behind my last class of sixth-graders. They were able to do the background research and to construct a solar oven. This was because I took time to provide them with skills to read the materials and synthesize the information into a work plan.”

Katrinia Zimmerman, CTE teacher, Turrentine Middle School, North Carolina
### AP Test Scores in AP History
#### Campbell County High School, Tennessee

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2012 Baseline Yr.</strong></td>
<td>80%</td>
<td>20%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td><strong>2013 Started PD</strong></td>
<td>35</td>
<td>40</td>
<td>15</td>
<td>10</td>
<td>0</td>
</tr>
<tr>
<td><strong>2014 Continued PD</strong></td>
<td>27</td>
<td>43</td>
<td>30</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>2015 Completed PD</strong></td>
<td>16</td>
<td>12</td>
<td>44</td>
<td>20</td>
<td>8</td>
</tr>
</tbody>
</table>
### Students’ Perceptions of Literacy-Based Assignments

<table>
<thead>
<tr>
<th>My teacher assigned me to:</th>
<th>SREB Trained</th>
<th>Non-SREB Trained</th>
</tr>
</thead>
<tbody>
<tr>
<td>HS/CTE — create written papers that demonstrated my content knowledge — monthly</td>
<td>47%</td>
<td>17%</td>
</tr>
<tr>
<td>HS/SS — create written papers and cite evidence from multiple sources — monthly</td>
<td>50</td>
<td>11</td>
</tr>
<tr>
<td>HS/SCI — complete a written assignment based on an experiment conducted — a few times a year</td>
<td>74</td>
<td>47</td>
</tr>
<tr>
<td>MS/ELA — asked to compare and contrast information from different texts — often</td>
<td>54</td>
<td>35</td>
</tr>
</tbody>
</table>
Teachers’ Perceptions of Instructional Shift Using Literacy-Based Assignments with School Leadership Support

<table>
<thead>
<tr>
<th>Supported Teachers</th>
<th>Non-Supported Teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adopted strategies to engage students in reading grade-level texts and using writing to demonstrate understanding of content</td>
<td>89%</td>
</tr>
<tr>
<td>Literacy-based assignments and students’ achievement on state assessments</td>
<td>54</td>
</tr>
</tbody>
</table>
Math Goal

- Advance students’ mathematical fluency and their abilities to understand, reason and apply math concepts to solving multistep problems
Focus on SREB’s Math Professional Development Involves Teachers

- Identify the math topics to be taught during the next six weeks.
- Select formative assessment lessons (FALs) aligned to math topics.
- Leave each workshop with a plan to launch a formative assessment lesson.
Gains in Math Scale Scores Among SREB-Prepared and Non-SREB-Prepared Math Teachers
2015-2016

Source: Jefferson County School District, Scantron Performance Series
Teachers’ Perceptions of Instructional Shift in Math Instruction Based on School Leadership Support

<table>
<thead>
<tr>
<th>Teachers report that:</th>
<th>Supported Teachers</th>
<th>Non-Supported Teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Using FALs enabled them to focus on students’ math understanding</td>
<td>82%</td>
<td>62%</td>
</tr>
<tr>
<td>Collecting information from FALs allow them to adjust their instruction</td>
<td>68</td>
<td>35</td>
</tr>
<tr>
<td>Using math practices learned raised students’ achievement on state assessment</td>
<td>68</td>
<td>47</td>
</tr>
</tbody>
</table>
Students’ Perceptions About Their Math Classroom Experiences in SREB- and Non-SREB Trained Teachers

<table>
<thead>
<tr>
<th>Students reported classroom experiences</th>
<th>SREB Trained</th>
<th>Non-SREB Trained</th>
</tr>
</thead>
<tbody>
<tr>
<td>MS — often had to explain how I solved a math problem</td>
<td>65%</td>
<td>48%</td>
</tr>
<tr>
<td>MS — often had to justify reasoning for solving a math problem</td>
<td>69</td>
<td>49</td>
</tr>
<tr>
<td>MS — often grouped with students who had similar math skills</td>
<td>51</td>
<td>39</td>
</tr>
<tr>
<td>HS — often solved real-world math problems in Algebra I</td>
<td>48</td>
<td>33</td>
</tr>
</tbody>
</table>
Skills most needed to succeed in a changing workforce

APPLIED KNOWLEDGE
- Reading
- Writing
- Mathematics
- Science
- Technology
- Critical Thinking

PERSONAL SKILLS
- Integrity
- Initiative
- Dependability & Reliability
- Adaptability
- Professionalism

PEOPLE SKILLS
- Teamwork
- Communication
- Respect

WORKPLACE SKILLS
- Planning & Organizing
- Problem Solving
- Decision Making
- Business Fundamentals
- Customer Focus
- Working with Tools & Technology