



# *If Programs of Study are the Answer, What is the Problem?*

And what is a “Rigorous” Program  
of Study



# The College & Career Challenge

## 9<sup>th</sup> Grade Cohort

## Benchmarks

## Workforce Credentials

- 100 enter 9<sup>th</sup> grade\*
  - ▾ 70 complete HS
  - ▾ 43 Start college
- ▾ 70% complete HS<sup>1</sup>
  - ▾ 62% start college immediately<sup>2</sup>
  - ▾ 47% drop out (31% with 0 credits)
  - ▾ 57% complete within 6 years<sup>3</sup>
- 30% enter as HS drop outs
  - 25% enter as HS grad
  - 19% enter with some college & a lot of debt
  - 18-24% enter with college degree (6/4;3/2)
1. Greene et al, 2006
  2. NCHEMS, 2009 (2006)
  3. NCES, 2010

\*An unknown number of pre-9th graders never make it to high school

# POS – The law

- ✚ *Incorporate secondary education and postsecondary education elements;*
- ✚ *Coherent and rigorous content in a coordinated, non-duplicative progression of courses that align secondary education with postsecondary education . . . to adequately prepare students to succeed in postsecondary education;*
- ✚ *May include dual or concurrent enrollment programs;*
- ✚ *Lead to an industry-recognized credential or certificate at the postsecondary level, or an associate or baccalaureate degree.*

# ***Rigorous Programs of Study include:***

- ✚ **Legislation and Policies**
- ✚ **Partnerships among Education, Business, and Other Community Stakeholders**
- ✚ **Sustainable Leadership and Shared Planning**
- ✚ **Rigorous Academic and Technical Standards Aligned with Curriculum and Assessments**
- ✚ **Aligned Secondary and Postsecondary Education Elements**
- ✚ **Credit Transfer Agreements**
- ✚ **Accountability and Evaluation Criteria**
- ✚ **Guidance, Counseling and Advisement**
- ✚ **Professional development**
- ✚ **Innovative Teaching and Learning Strategies**

Youth  
Apprenticeship  
Career  
Education  
1980  
1970-1980  
1980

Tech  
Prep

1990-?

Work-based  
1994-2000





Evidence Based Policy

**TO AVOID THE GHOSTS OF  
REFORM PAST...**

# To Test the Concept of POS . . .

- ▣ Complete high school?
  - ▣ Achieve academically?
  - ▣ Achieve occupationally?
  - ▣ Transition to life beyond high school?
- 3 rigorous, longitudinal studies to examine various elements of POS
  - A Cross-Site Study examining 3 exemplary sites from the rigorous studies to determine common attributes and elements that make programs work
    - The 10 elements developed by OVAE and others used as interview/observation framework
  - A qualitative study to examine development and technical assistance in 6 states (not reported here)



# Rigorous, Longitudinal POS Studies: Mixed Method Studies\*

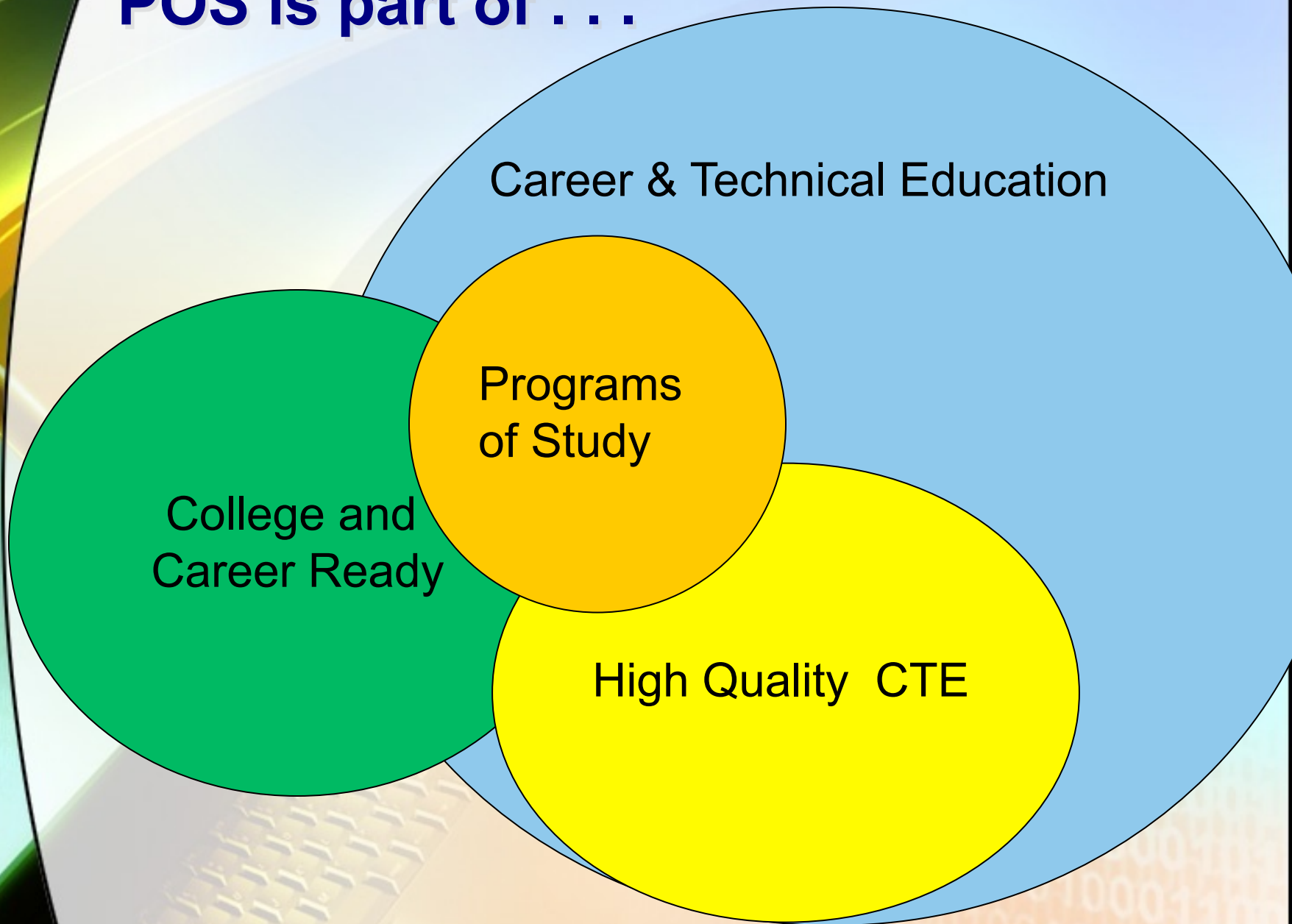
- ↘ A longitudinal study of three cohorts in SC (6<sup>th</sup>, 9<sup>th</sup>, 11<sup>th</sup> graders) in three diverse WIAs
- ↘ A backward mapping (from CC) study of three sites with 15 years of history of POS-like programs
- ↘ A random assignment or propensity match study in five sites (3 states)

\* Systems Data (transcript) & Interview, Survey Data

# Caveats

- ▾ These are longitudinal studies
- ▾ Data collection lags actual events
  - Students have to complete the “thing”
  - A true POS includes HS&PS – 4+ 2-3 years minimum
  - Release of system lags by 4 months to 4 years.
- ▾ Early findings will point toward proximal variables
  - Progress toward graduation
  - Behaviors
  - Self-efficacy
  - Academic & Technical Achievement
- ▾ Evidence on distal variables 5+ years(?)

# POS is part of . . .



Career & Technical Education

Programs  
of Study

College and  
Career Ready

High Quality CTE

# *A Longitudinal Study of the South Carolina Personal Pathways to Success Initiative*

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# Purpose of Study

- To examine the influence of South Carolina's Education and Economic Development Act (EEDA) on the development of programs of study (POS) and student outcomes

# Major Points/Justification

- EEDA contains nearly all of the basic and supporting components identified by OVAE for the successful development of a Perkins IV funded POS – but is aimed at all students
- SC passed EEDA one year prior to Perkins IV
- Our study is looking at early implementation and outcomes
- The Class of 2011 is the first cohort fully exposed to law from 8<sup>th</sup> grade through 12<sup>th</sup> grade

# Interim Observations

- The policy has increased the amount of career exploration, planning, and guidance that students are receiving; amount and type of activities vary across sample schools
- Policy components are helping to lay some of foundation necessary for development of programs of study and other career pathways
- Variations in level of implementation of EEDA/POS due to variety of factors:
  - Amount of school and district buy-in to reform
  - Level of resources available within districts and communities
  - Types of adjustments made to counter declining state funding for EEDA and other educational services
  - Strategies used to address increased demands placed on school personnel

# Importance of Guidance

- Guidance personnel are playing key roles but demands of EEDA mandated new duties have been added onto old ones, contributing to work overloads
- Individual Graduation Plans (IGPs) are a key facet of policy implementation
  - **Increased** student-counselor interactions about career planning
  - Seen by school personnel as well students as a **valuable tool** in helping students learn to think about the future and to develop career goals and strategies for achieving these goals
- Students surveyed reported turning to their guidance counselors more than anyone else for help in planning



# Influence of the Policy on CTE Awareness and Participation

- The IGP process has increased counselor awareness and knowledge of CTE and dissemination of that information
- CTE teachers report increase in numbers and more appropriate placement of students – better prepared and “want to be there”
- Staff reported reduction in stigma associated with CTE in many sample schools
- Staff and students reported challenges with CTE course taking: tradeoffs between CTE, AP, Dual Credit courses

# Differences in Survey Reports of 10<sup>th</sup> Grade CTE and Non-CTE Participants

- More Class of 2011 CTE participants reported
  - Improved student engagement due to having major/cluster
  - Participation in job/career identification activities
  - Participation in activities that helped them think about planning for a job
  - Participation in work-based learning experiences

# Differences in Reports of Class of 2009 and Class of 2011 as 12<sup>th</sup> Graders

- No significant differences on:
  - *Taking courses earning college credit*
  - *Taking CTE courses*
  - Reports of *participation in activities* that helped them think about planning for a job (e.g., such as gathering information about jobs they might be interested in or taking classes to help them decide what kind of job they might like)

# Differences in Reports of Class of 2009 and Class of 2011 as 12<sup>th</sup> Graders

- But more Class of 2011 reported:
  - Answering *questions related to jobs/careers* on computer or questionnaire (84% vs. 79%)
  - Being in a class where *local business person spoke* about his/her company/occupation (69% vs. 60%)
  - Having *participated in job-shadowing work-based learning experiences* (53% vs. 39%)

# Early Observations

- The policy has **increased the amount of planning and guidance** that students are receiving; amount and type of activities vary across sample schools.
- Substantial variation in level of implementation of EEDA/POS
- Guidance personnel are playing key roles but demands of EEDA mandated new duties have been added onto old ones, contributing to work overloads
- **Individual Graduation Plans** (IGPs) are a key facet of policy implementation
  - **Increased** student-counselor interactions about career planning
  - Seen by school personnel as well students as a **valuable tool** in developing career goals and strategies for achieving these goals.
- Students surveyed reported turning to their guidance counselors more than anyone else for help in planning

# Mature Programs of Study: A Postsecondary Perspective



**CORINNE ALFELD &  
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THE SCIENCE OF IMPROVING LIVES



National Research  
Center for Career and  
Technical Education

# Purpose and Design of Study



- **Longitudinal study of “mature” POS sites**
  - Identify components and processes important in successful development and implementation of POS
  - Map the findings back onto Perkins IV legislation
- **Study Design**
  - 4 years
  - 3 sites
  - 2 cohorts
  - Mixed methods (interviews, focus groups, surveys, transcripts)
  - Additional “systems data” component added

# Study Sample



“Desert” college – culinary arts,  
film crew technician,  
construction technology

“Northern” college – automotive technology,  
welding

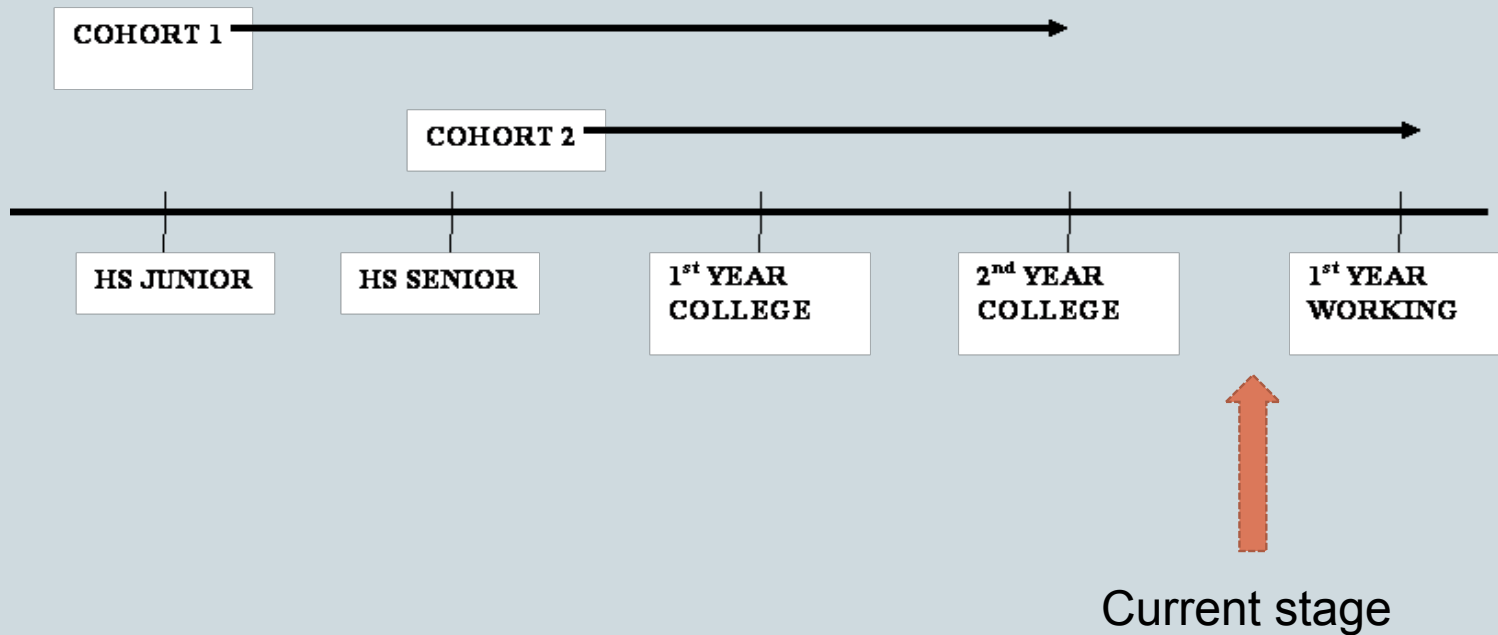
“River” college – industrial maintenance,  
mechatronics



# Quantitative Data (Students)



Two cohorts being followed for 4 years each



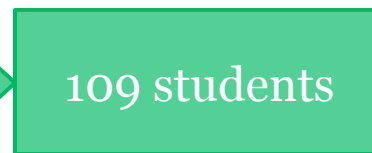
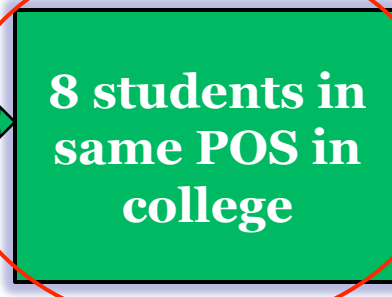
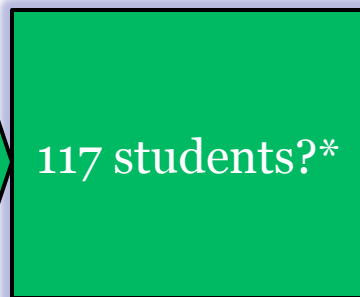
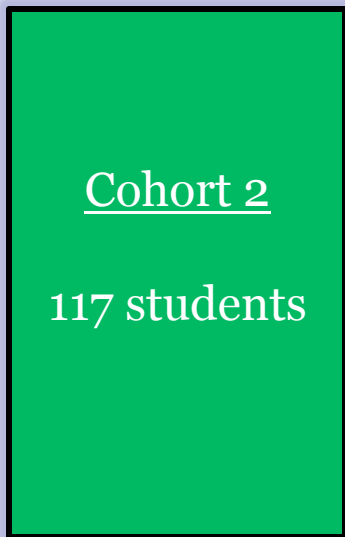
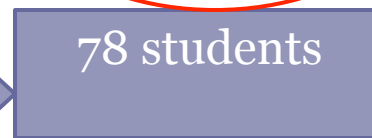
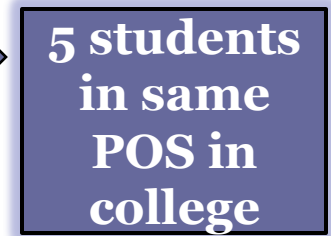
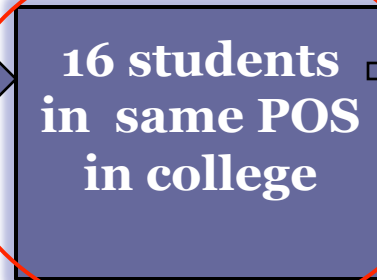
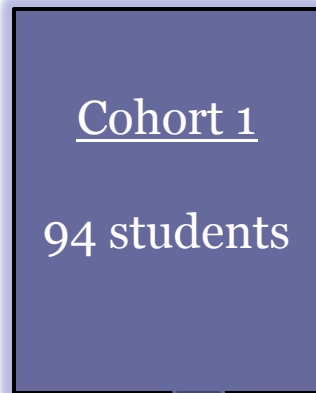
HS Junior

HS Senior

1<sup>st</sup> year College

2<sup>nd</sup> Year College

(College with POS connection)



- in another POS?
- in another college?
- working full-time?
- military?
- other?

\*Note: This flow chart does not take into account HS dropouts or transfers

# Understanding the Transition Data



- Of students in our sample across all three research sites *who enrolled in the affiliated college at the expected time point*, 45% stayed within the same POS.
- Of students who did *not* transition to the postsecondary portion of the mature POS:
  - (1) some did not go to college at all after high school;
  - (2) some went to other colleges; and
  - (3) some went to the affiliated college but did not stay in the same POS area.

# Systems Data – Findings from 1 site



Preliminary analyses from River College indicate significant differences—*favoring students who attended the mature POS high schools*—on:

- Total number of CTE dual credits earned
- Total number of non-credit courses in college
- College GPA

In addition, at the River site, 17% of POS students earned a certificate in their POS area before graduating from high school

- ❑ Mature POS are "mature" because there has been an investment in connecting secondary and postsecondary: each of our 3 colleges have staff dedicated to creating connections with HS.
- ❑ Even when POS are "mature," and even though the majority of students report positive experiences in their POS, students do not necessarily continue in the POS in college (at least not right away).
- ❑ Both HS and college students report that their parents are most influential in their course planning. Counselors are rated as least helpful.

# Do CTE Programs of Study Improve Student Achievement? Early Results from an Experimental Study

Marisa Castellano

Laura T. Overman

Kirsten Sundell

Oscar A. Aliaga

National Research Center for Career and  
Technical Education

# Rigorous Tests of POS: Participating Districts/Schools

## ↘ **West** - Three POS high schools:

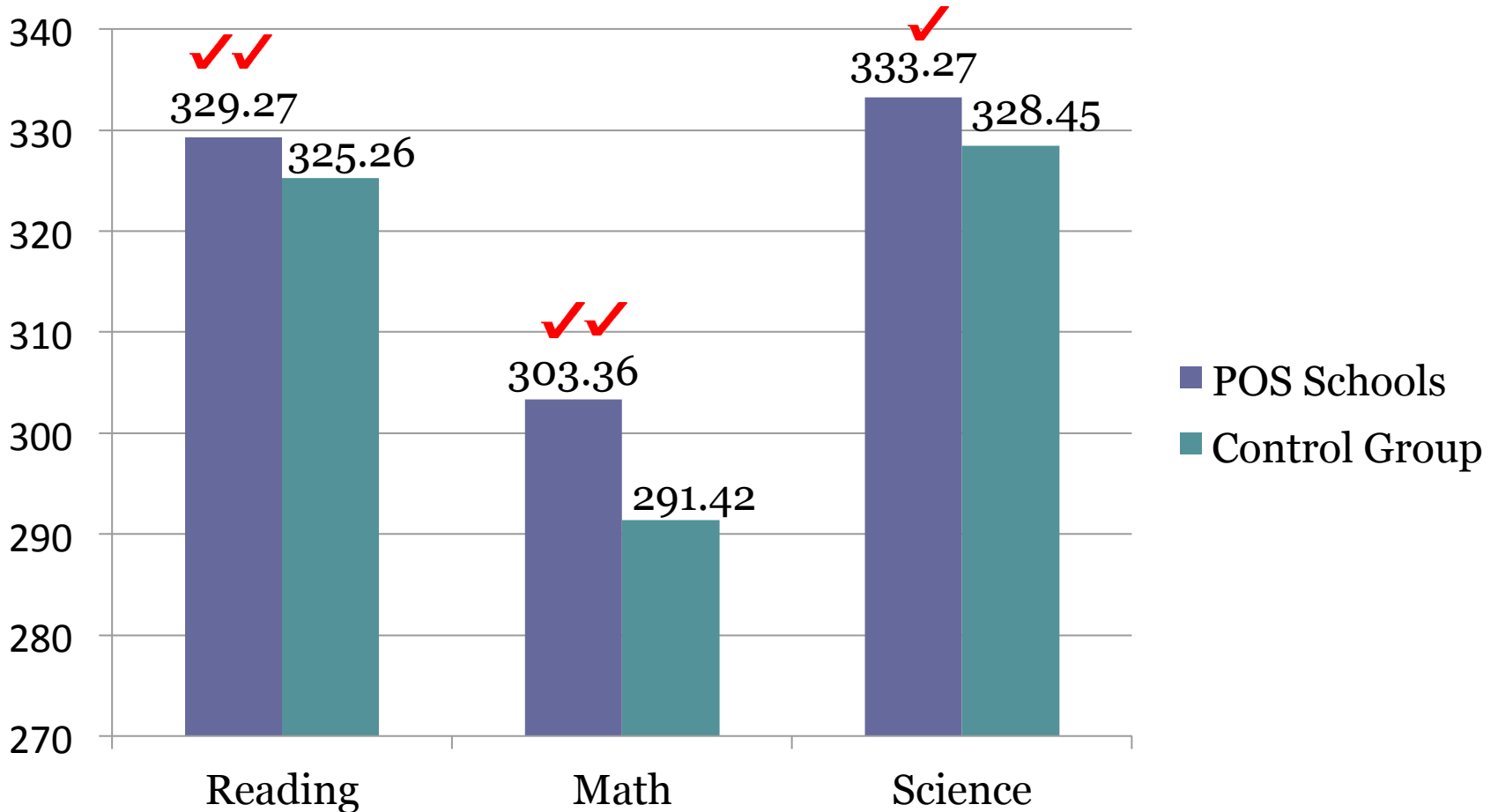
- wall-to-wall tech-focused academies (e.g., computer science, legal studies);
- former career center with upgraded academics (e.g., construction, graphic design, automotive);
- new specially designed facility with PBL focus (e.g., pre-engineering, hospitality, culinary)

## ↘ **East** – One POS high school:

- wall-to-wall tech-focused academies (e.g., health sciences, pre-engineering, IT)

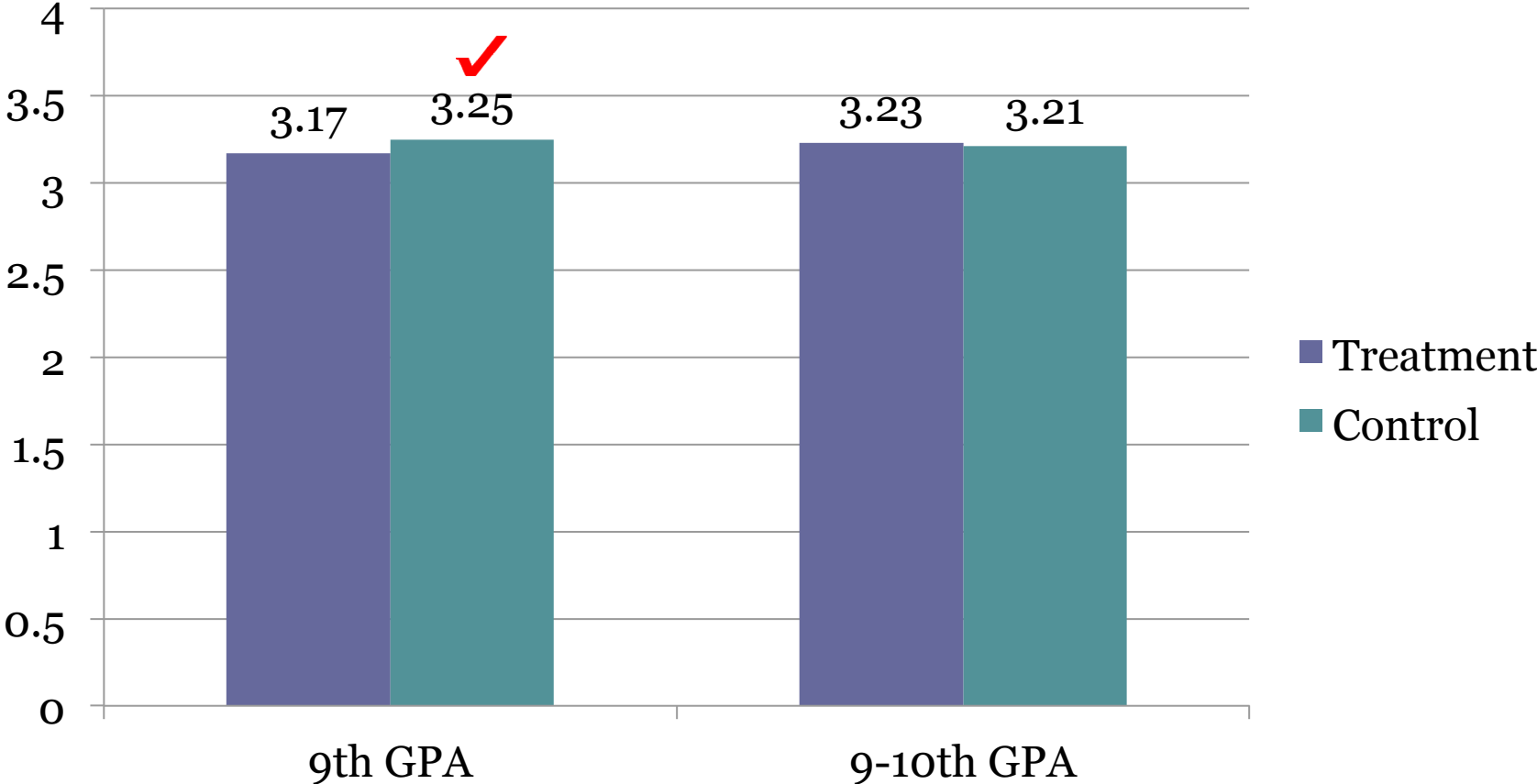
## ↘ **Pending** - a career academy-based POS model

# West District 10<sup>th</sup> Grade Test Scores

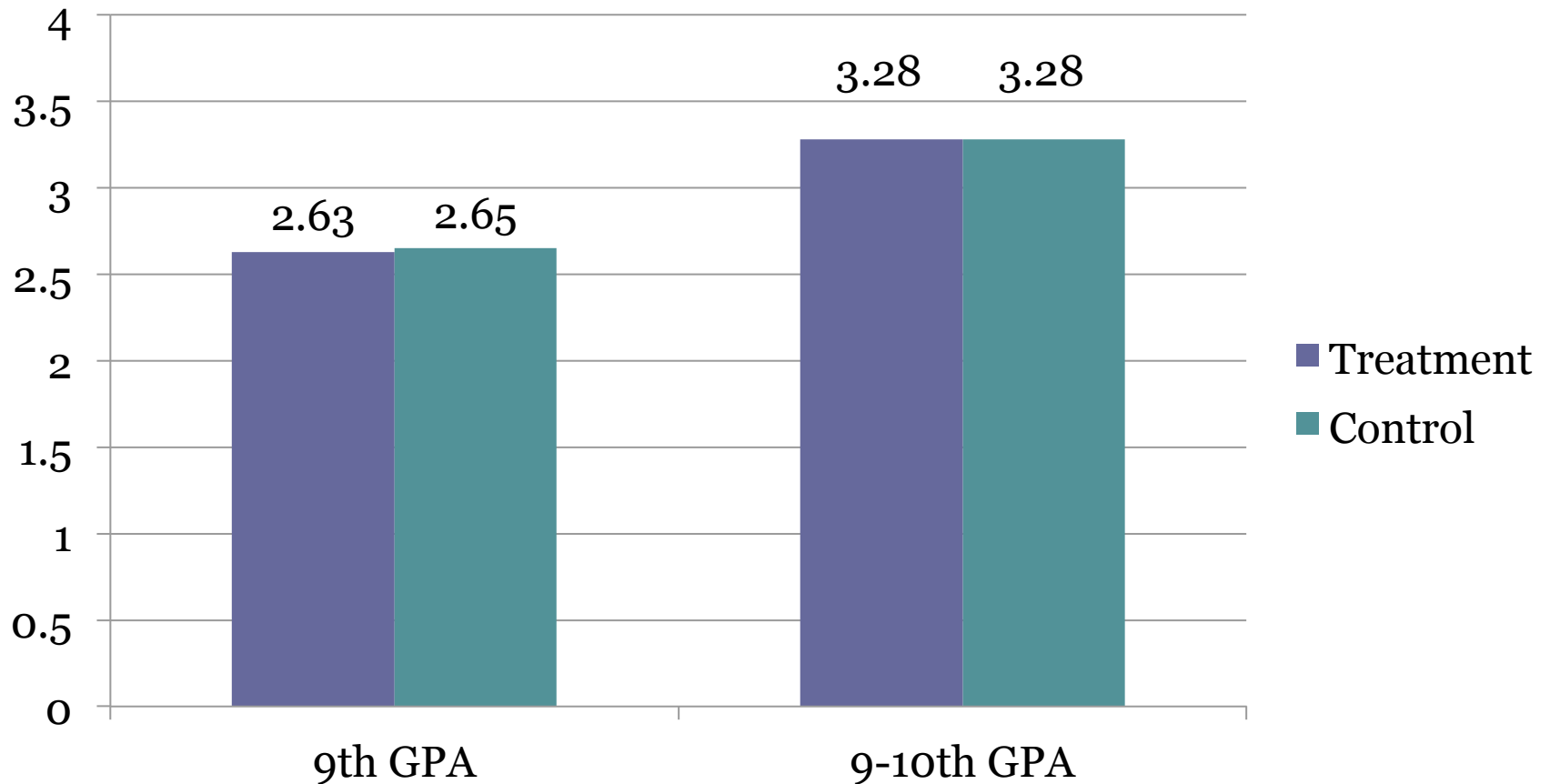




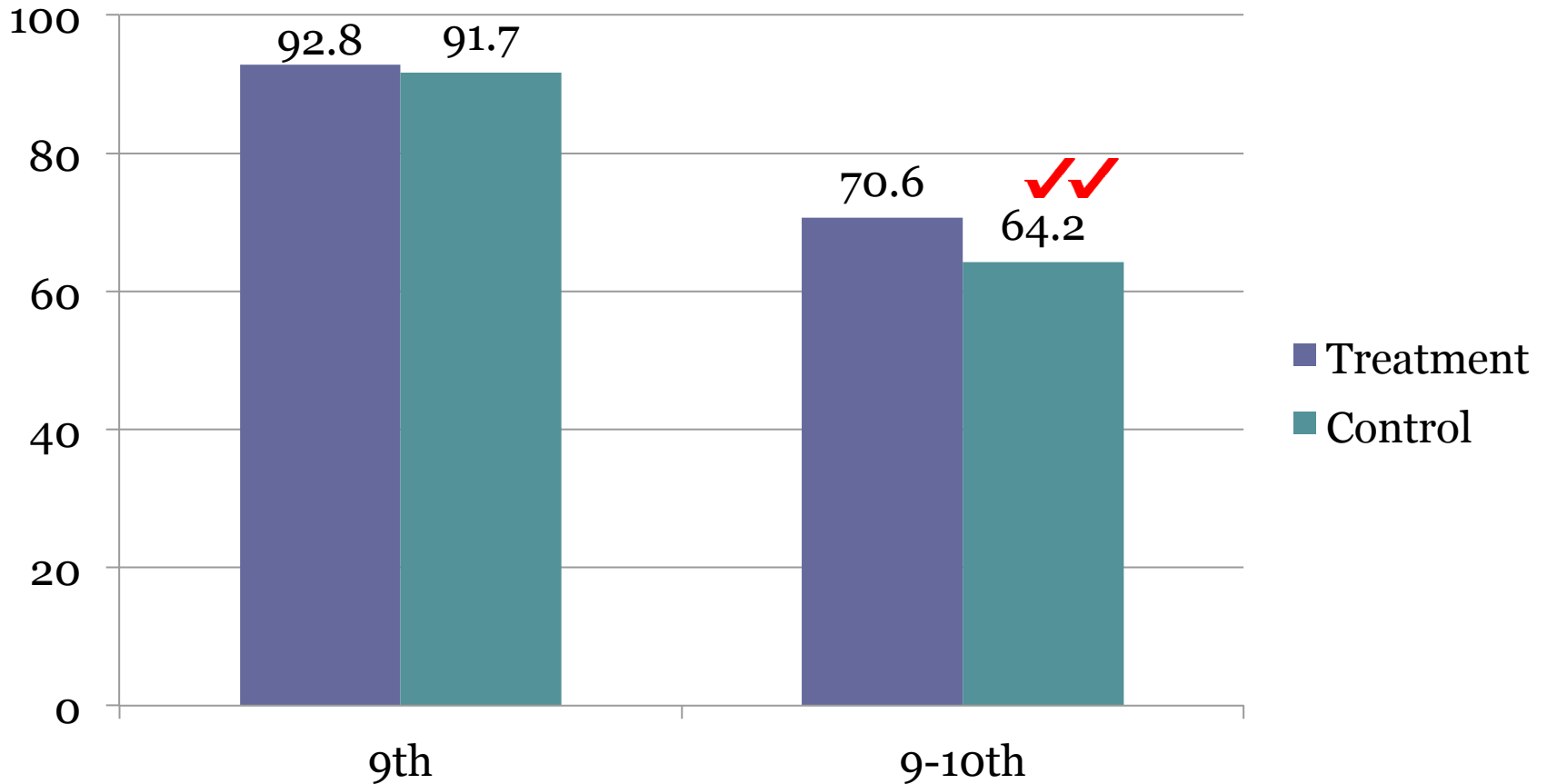
# West District: 9-10 CTE GPA



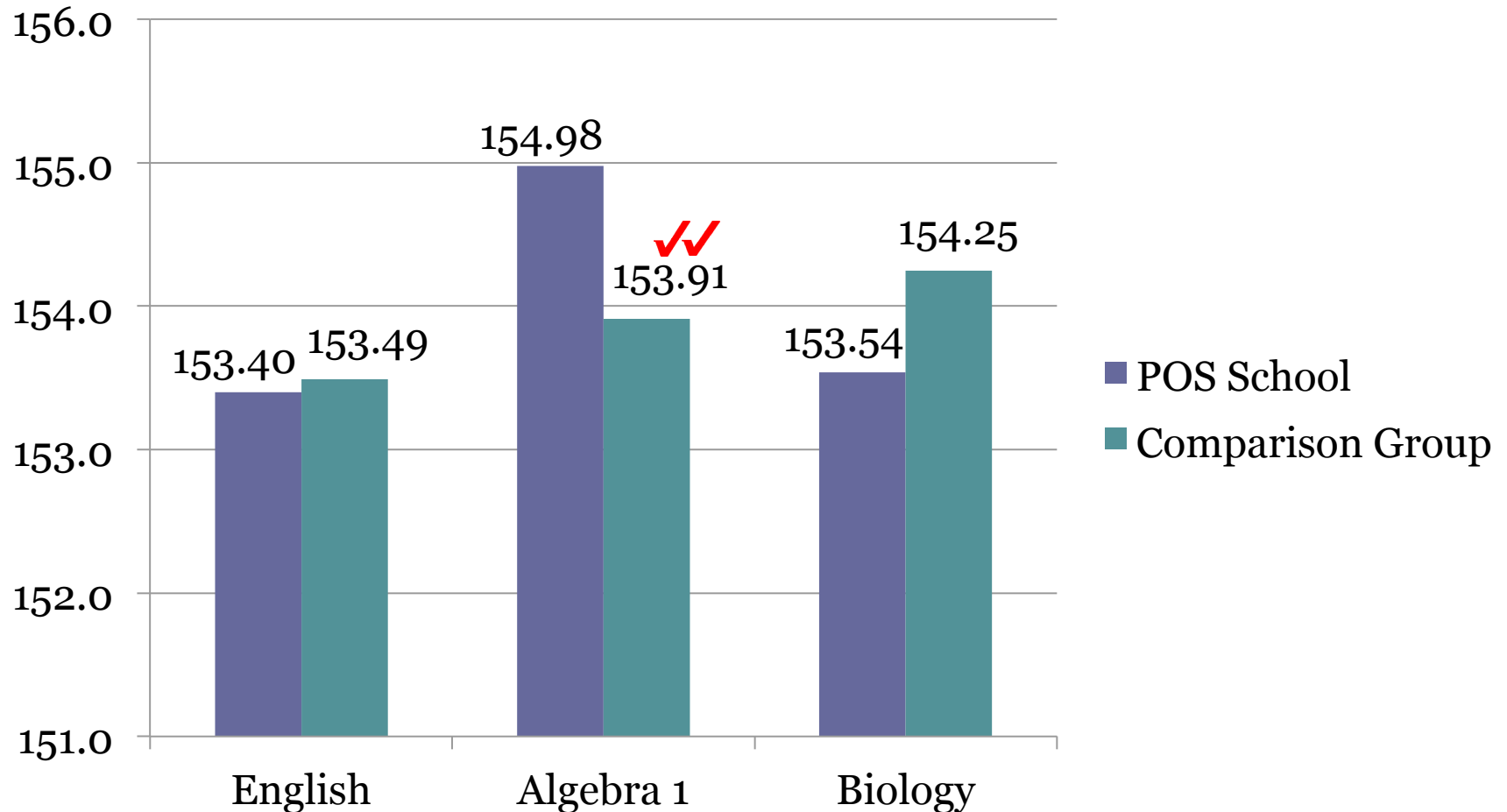
# West District: 9-10 Academic GPA



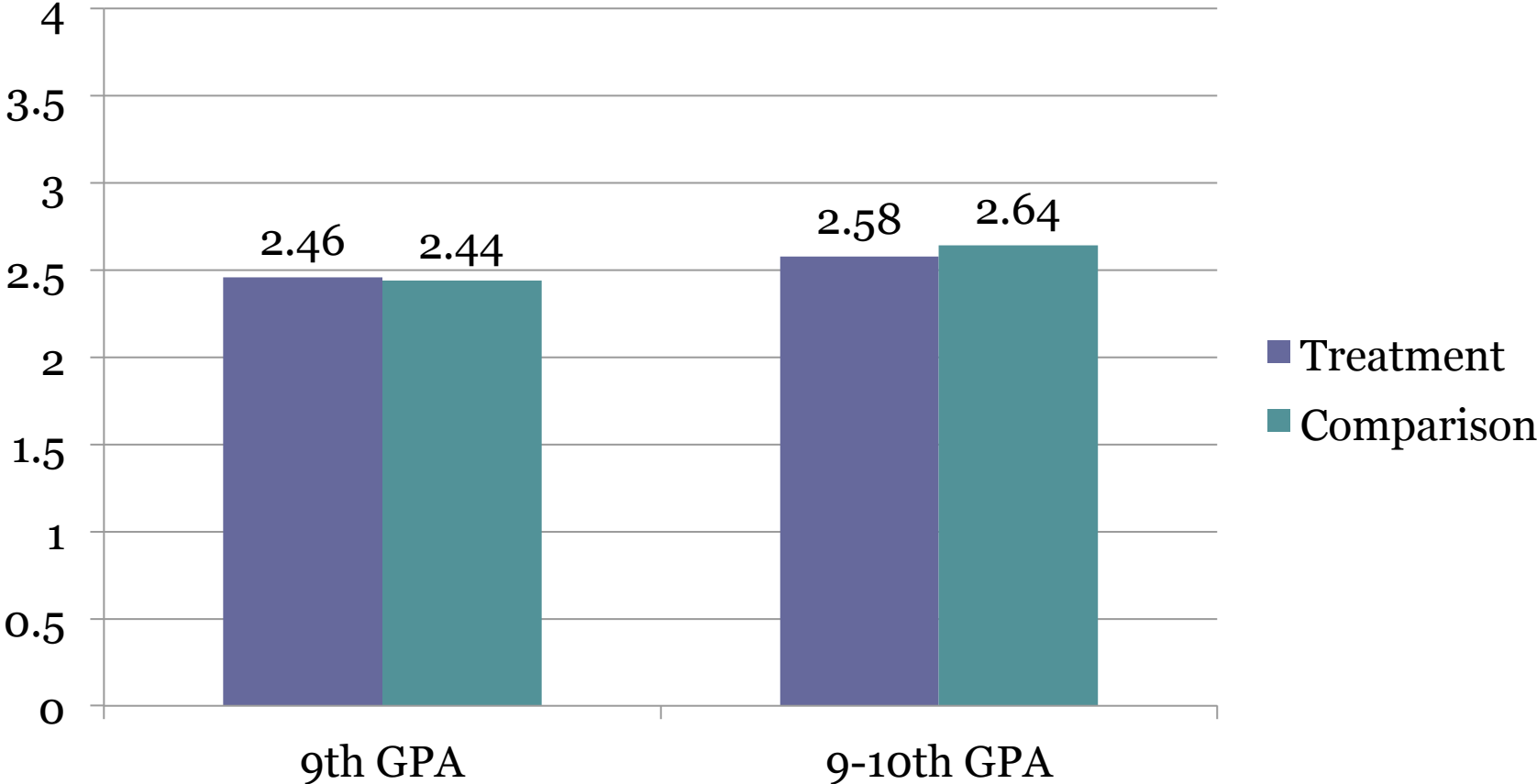
# West District: On Track to Graduate on Time



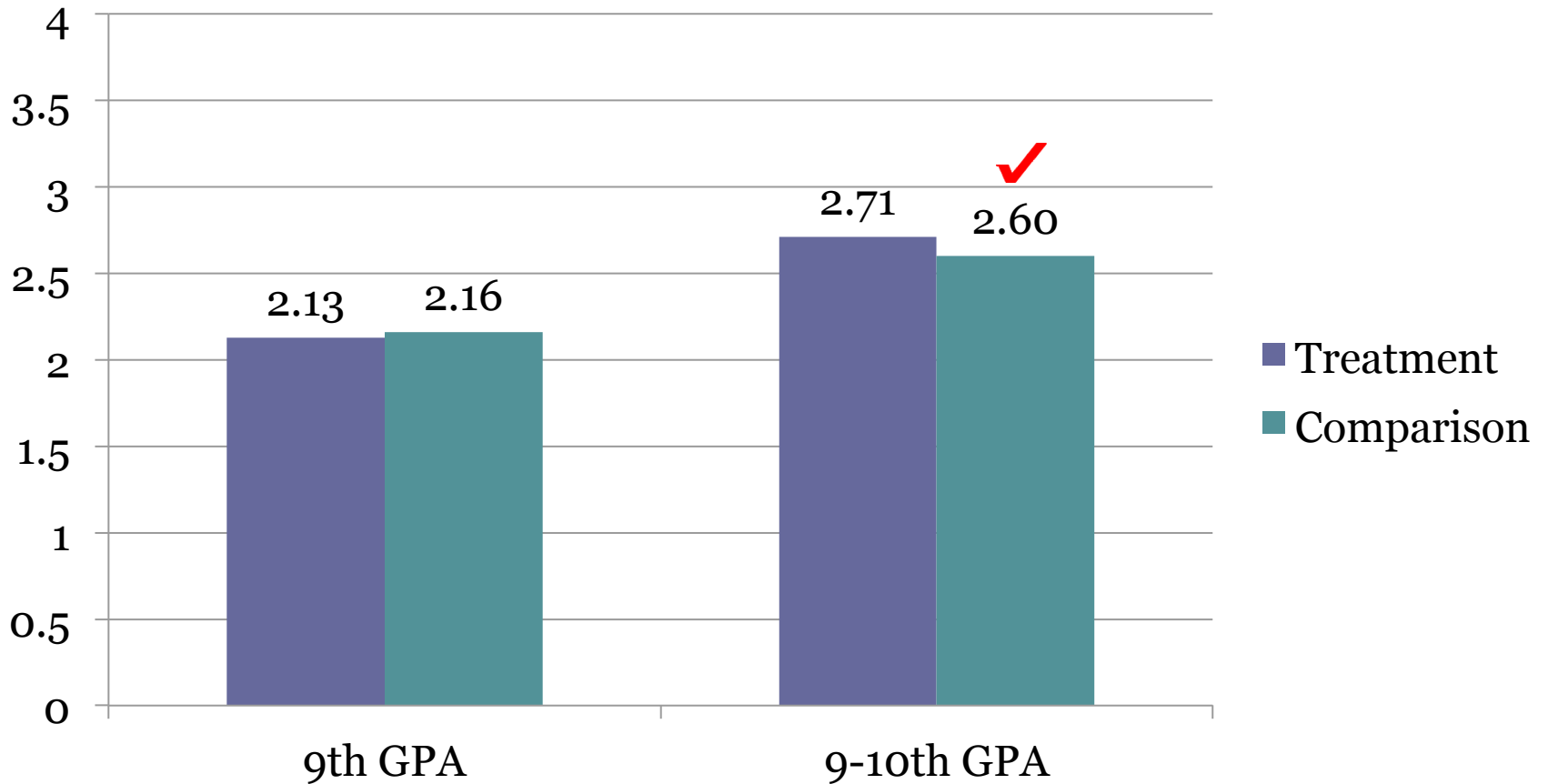
# East District 10<sup>th</sup> Grade Test Scores



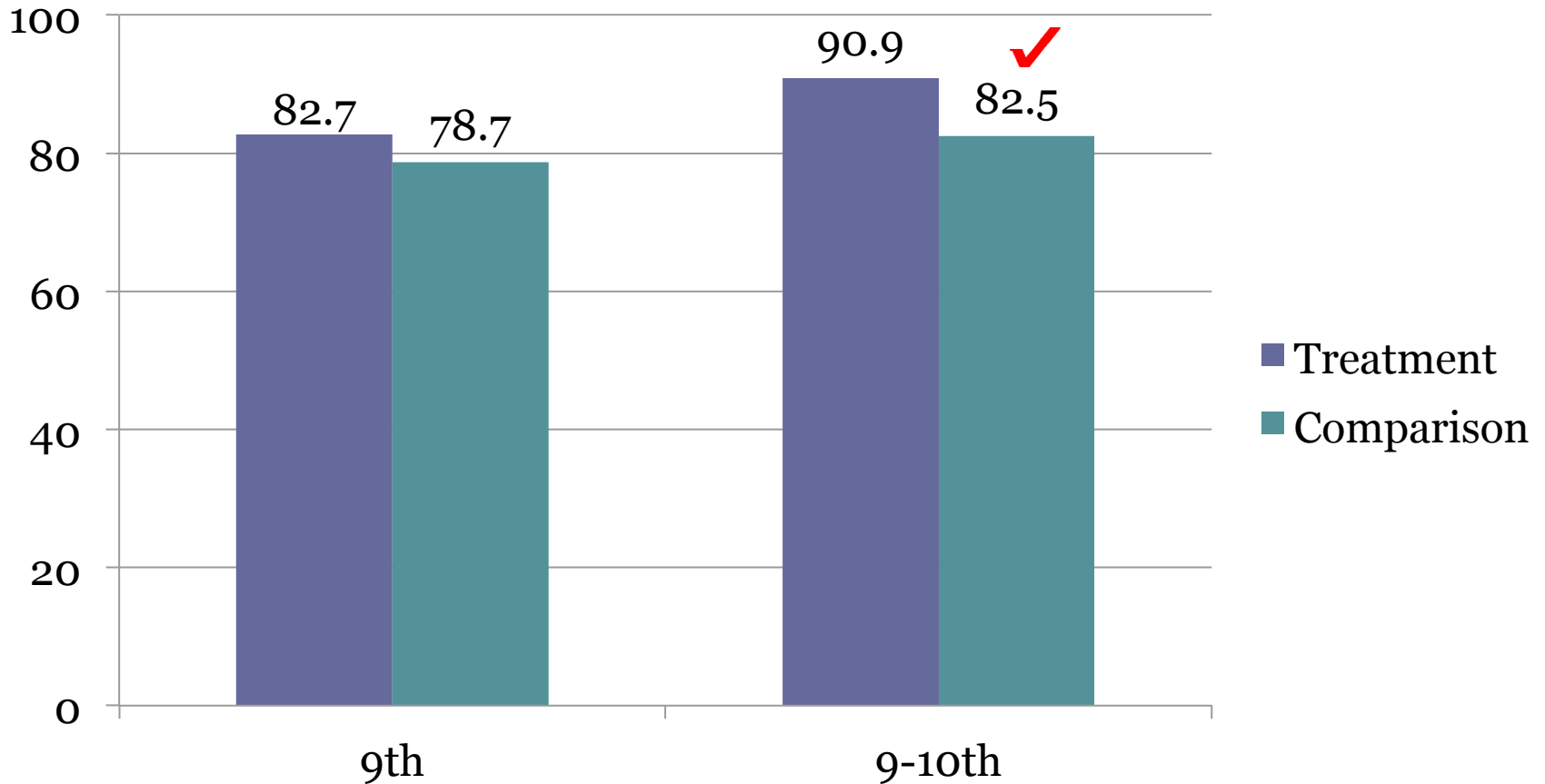
# East District: 9-10 CTE GPA



# East District: 9-10 Academic GPA



# East District: On Track to Graduate on Time



# Early Observations

- ▾ Ninth grade is too early to see differences due to participation in POS
- Is 10<sup>th</sup> grade too early?
  - Most students have begun their POS in earnest
  - 10<sup>th</sup> grade test scores are the scores schools and districts use to show achievement. There will be no other large assessment of these students before they leave high school.
- ▾ Academic foundations being laid at the POS and control schools:
  - West District appears to have a strong academic press on all students in the sample
  - East District's POS school seems to have higher expectations than the control schools, perhaps to introduce complex technical concepts in the upper-level POS courses



# 10 Elements of RPOS-Evidence

## Element

- ✚ **Legislation and Policies**
- ✚ **Partnerships**
- ✚ **Professional Development**
- ✚ **Accountability and Evaluation Systems**
- ✚ **College and Career Readiness Standards**

## Evidence

- ✚ NRC Cross-state study (qualitative)
- ✚ NRC POS studies (qualitative)
- ✚ NRC POS studies & CI research
- ✚ NRC POS studies (qualitative)-Potential issue

# 10 Elements of RPOS

## Element

- ↘ **Course Sequences**
- ↘ **Credit Transfer Agreements**
- ↘ **Guidance Counseling & Academic Advisement**
- ↘ **Teaching and Learning Strategies**
- ↘ **Technical Skills Assessments**

## Evidence

- ↘ SREB/HSTW – PFT
- ↘ 3 NRC studies & KY study
- ↘ NRC POS studies
- ↘ NRC CI studies
- ↘ NRC POS surveys



# **Perkins Programs of Study: A Cross-Site Study of Impact**

Robert Shumer, U of Minnesota  
Sam Stringfield, U of Louisville  
Natalie Stipanovic, U of  
Louisville

# Interview Framework: 10 Components

- ✓ **Legislation and Policies**
- ✓ **Partnerships among Education, Business, and Other Community Stakeholders**
- ✓ **Sustainable Leadership and Shared Planning**
- ✓ **Rigorous Academic and Technical Standards Aligned with Curriculum and Assessments**
- ✓ **Aligned Secondary and Postsecondary Education Elements**
- ✓ **Credit Transfer Agreements**
- ✓ **Accountability and Evaluation Criteria**
- ✓ **Guidance, Counseling and Advisement**
- ✓ **Professional development**
- ✓ **Innovative Teaching and Learning Strategies**

# **Interviews with: College & HS Administrators; College and HS Teachers; Business Reps; Counselors and Others**

- Site 1: located in large metropolitan city in western US.
- Site 2: located in eastern US, semi-urban area with community college serving 9 school districts.
- Site 3: located in southeastern US, urban area with community college serving 2 school districts

# Common Components for Success

- ✚ Emphasized teaching methods, e.g., project based learning
- ✚ All used flexible schedules, such as block schedules, for organizing learning time/visits to other sites and community settings
- ✚ Strong/intentional connection between CTE and academic teachers (even physical placement of classes next to each other)
- ✚ Strong administrative support: role was to "get out of the way" of teachers and students
- ✚ Focus on student learning as major emphasis
- ✚ CTE/POS had parity with academic programs: students wanted to attend for both college and career preparation (in one site dual enrollment grades counted same as in Advance Placement)
- ✚ Key personnel had strong connections to both educational institutions and business/industry --- knew how each world worked

# Emerging Themes

- ▾ Engagement:
  - Meaningful learning
  - Project-based
  - Hands-one
  - Integrated
- ▾ Seamless connections:
  - middle school through college
- ▾ Communication & collaboration
  - “blurring the lines between one level and the next.”
- ▾ Focus:
  - Student learning
- ▾ Certification of “knowledge and skills”
  - learning had to manifest itself through demonstration/use of skills and knowledge

# What they told us . . .

- POS as main focus of CTE
  - elements critical to educational reform (active and meaningful learning, connected to future)
  - integrated curriculum
  - education as a “seamless process”
- ▣ Connect to other educational reform initiatives
  - service-learning
  - civic engagement
  - community as place of instruction
- ▣ Flexible outcome measures: Transition to college is not always a linear process



# More Recommendations From the Field

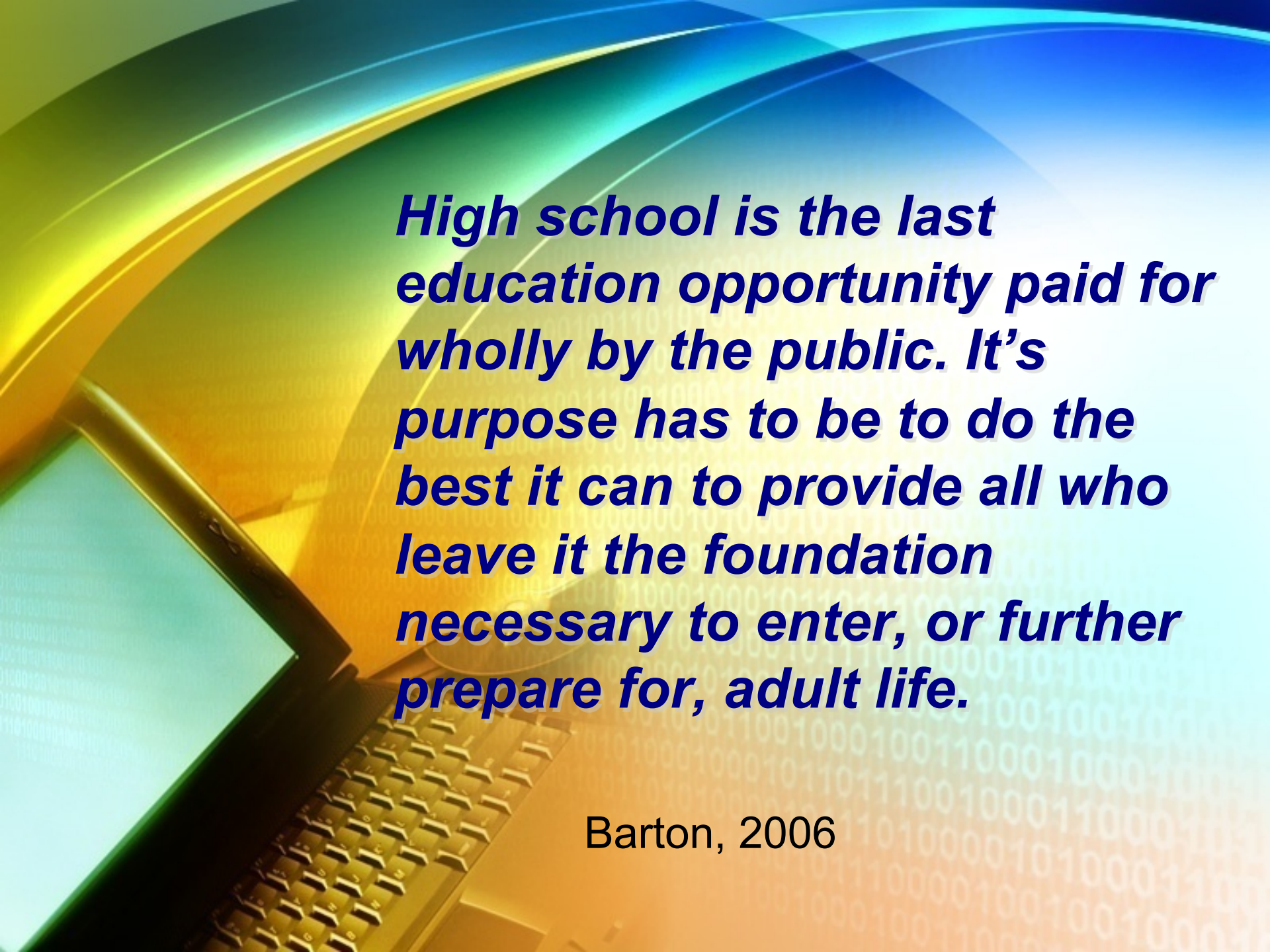
- ▾ Focus on student learning
  - emphasize focus on careers
  - Emphasize academics in the context of life/work
- ▾ Relationships matter
  - Secondary and post-secondary teachers/faculty
  - Business/industry and educational institutions
  - Students and teachers
  - Parents and students

# Reflections on what we observed...

- ▾ Implicit theory underlying POS
  - Clear career focus increases engagement and improves academic performance ...
  - Students experience a smoother transition from education to employment
- ▾ While some of the mandated components of POS are in place or are being put in place
  - Too early to determine if these components will produce the outcomes specified in the legislation:
    - high school graduates who continue their education or training in the same POS they studied in high school
    - and who earn industry-recognized credentials or postsecondary degrees

# So, what do we know so far...

- ▣ Complete high school?
  - Leaning in a positive direction
- ▣ Achieve academically?
  - Leaning in a positive direction
- ▣ Achieve occupationally?
  - Too early to tell
- ▣ Transition to life beyond high school?
  - Leaning in a positive direction



***High school is the last education opportunity paid for wholly by the public. It's purpose has to be to do the best it can to provide all who leave it the foundation necessary to enter, or further prepare for, adult life.***

Barton, 2006

# Emerging Trends/Issues

- ▼ Just because a POS is strong and students have positive experiences does not mean they will continue.
  - Issue: If a student does not continue in the same POS is this a negative outcome?
- ▼ Counselors need to be better informed about (involved in) POS
- ▼ Students need more career-related work opportunities (WBL).
- ▼ Requires sustained leadership over time.
- ▼ Even with reasonably strong efforts, ***change takes time***. Stability at every level (including federal policy) helps a lot.

# A Possible Perkins V Issue: Accountability

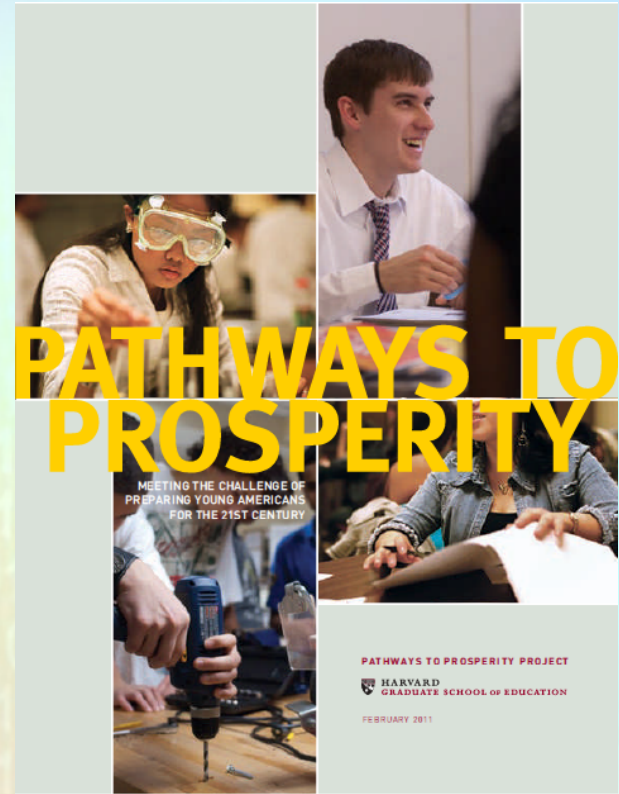
The measure of success of POS should be whether they provide students with the ability to make future educational and career decisions using the skills they gained through participation in POS, as results support (i.e., not whether they stayed in the same area HS ->PS)

# Areas for improvement

- ▣ Career development
  - Early career counseling in K-12
  - Continued career counseling postsecondary
- ▣ Better curriculum integration;
- ▣ Paid work-based learning encouraged or required.

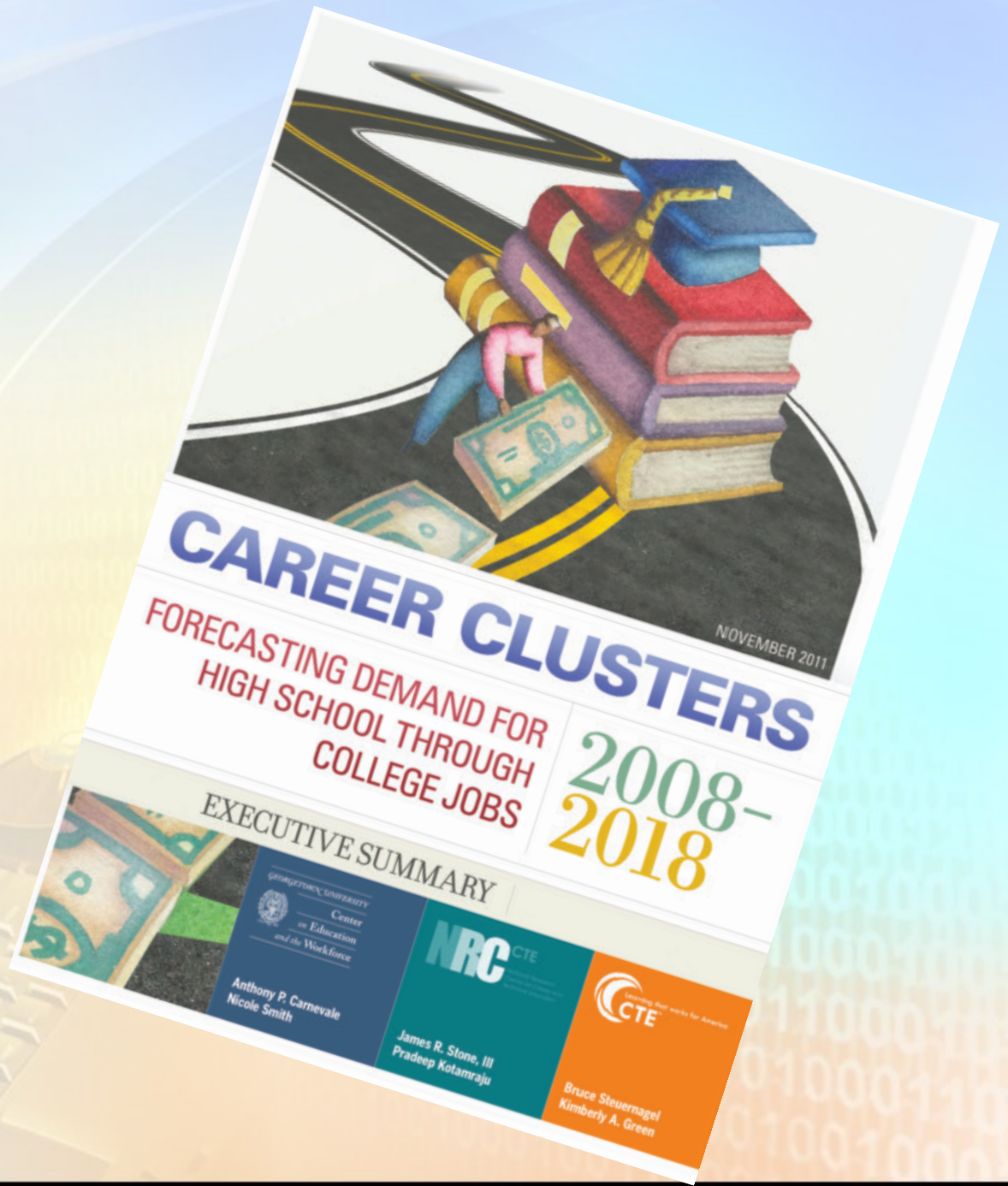
# Two New Reports on Career & College Ready

- U.S. Employers increasingly complain that young adults lack “21st Century Skills”:





# POS Foci?





For more:

James Stone

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[www.nccte.org](http://www.nccte.org)

**NRC**<sup>CTE</sup>

National Research Center for  
Career and Technical Education