

CAREER AND TECHNICAL EDUCATION IN HIGH SCHOOL: DOES IT IMPROVE STUDENT OUTCOMES?

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Background

- Career and technical education has increasingly been a buzzword over the last several years, in part driven by CCSS focus on college and career readiness (US DOE, 2012)
 - Prior work on the effects of CTE on student outcomes who positive effects on wages, (Bishop & Mane, 2004; Kemple, 2008; Page, 2012).
 - Evidence of the effects of CTE participation on academic outcomes is more mixed with less strong causal identification.
 - Focus of policy in Arkansas provides a nice opportunity to understand whether CTE course taking effects student high school completion, college going, and labor market outcomes.
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Research Questions

- 1. Which students are taking CTE courses?
Which courses – and how many of them –
are they taking?**
 - 2. Does greater exposure to CTE improve
education and employment outcomes?**
 - 3. Does CTE concentration have benefits for
students? Do certain students benefit more
than others?**
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Data

TABLE 1 | COHORT DATA

	Cohort 1	Cohort 2	Cohort 3
One year after high school	2012-13	2013-14	2014-15
Twelfth Grade	2011-12	2012-13	2013-14
Eleventh Grade	2010-11	2011-12	2012-13
Tenth Grade	2009-10	2010-11	2011-12
Ninth Grade	2008-09	2009-10	2010-11
Number of students	36,090	35,985	32,358

Note: Cohort 3 (class of 2014) is the first graduating class that fulfilled the Smart Core requirements of six units of career focus coursework.

Who is represented in CTE?

FIGURE 3 | NUMBER OF CTE COURSES AND CONCENTRATOR STATUS BY RACE/ETHNICITY

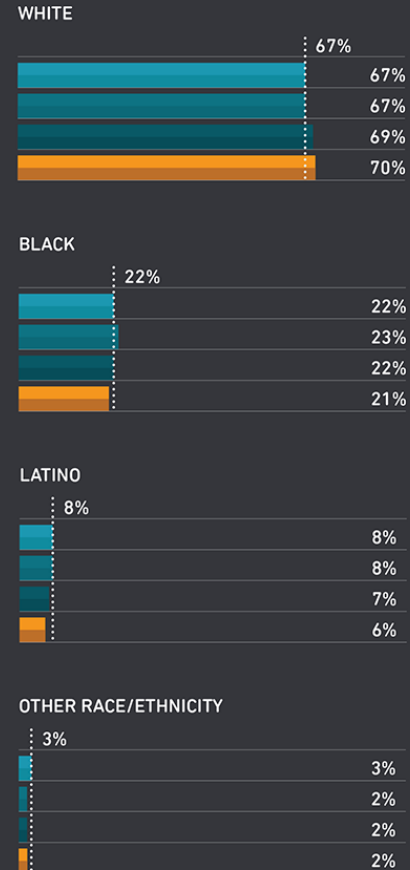
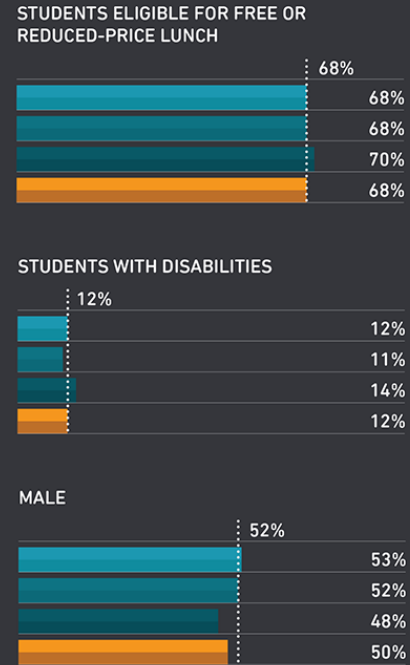


FIGURE 4 | NUMBER OF CTE COURSES AND CONCENTRATOR STATUS BY KEY DEMOGRAPHICS



..... ALL STUDENTS 0-2 COURSES 3-6 COURSES 7+ COURSES CONCENTRATORS

Who is represented in CTE?

FIGURE 5-A | NUMBER OF CTE COURSES AND CONCENTRATOR STATUS BY EIGHTH GRADE MATH TEST SCORES

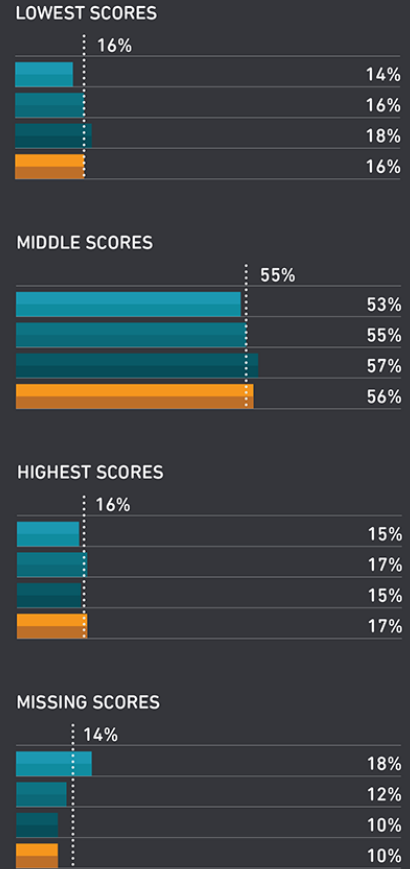
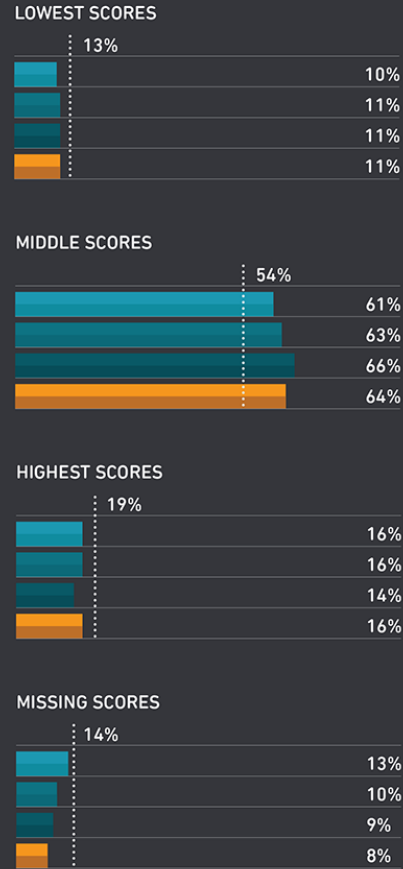


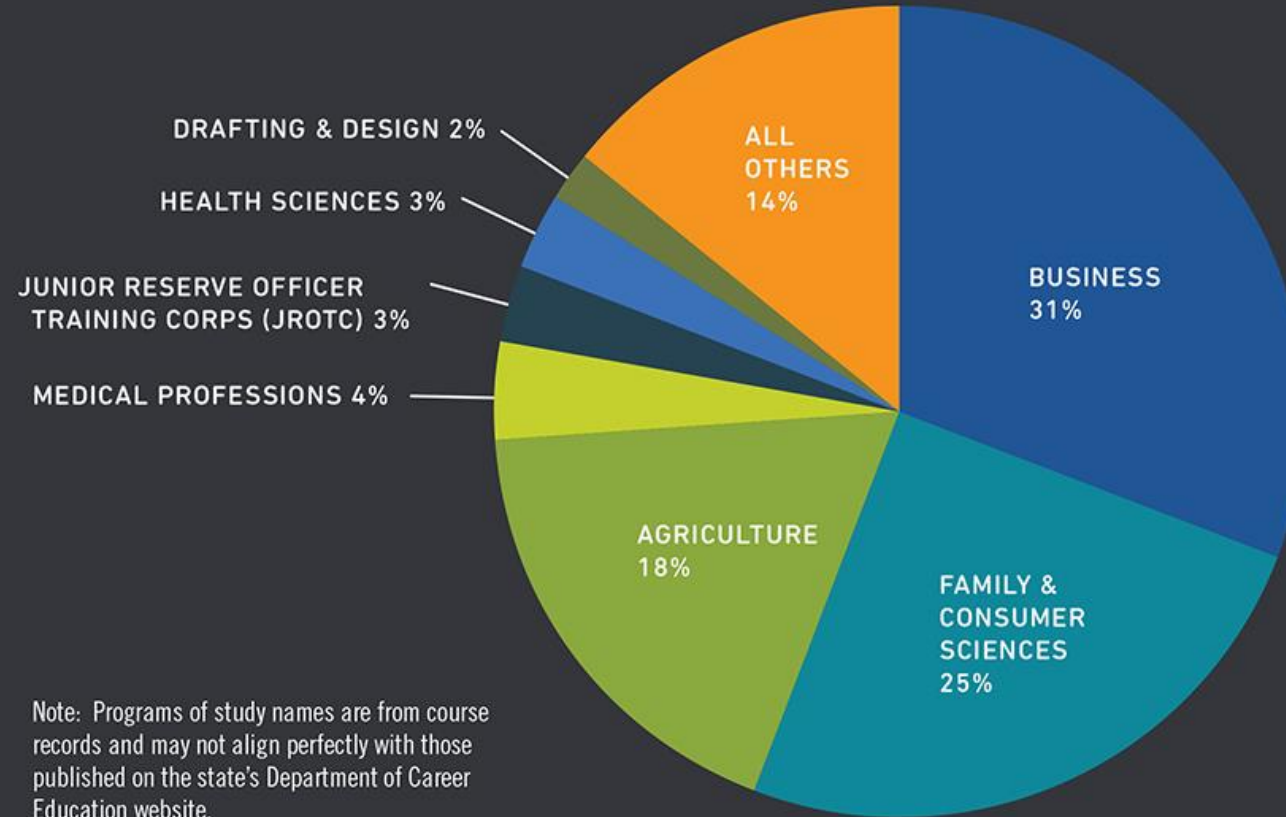
FIGURE 5-B | NUMBER OF CTE COURSES AND CONCENTRATOR STATUS BY EIGHTH GRADE LITERACY SCORES



..... ALL STUDENTS 0-2 COURSES 3-6 COURSES 7+ COURSES CONCENTRATORS

Where are the concentrators?

FIGURE 7 | MOST POPULAR PROGRAMS OF STUDY FOR CONCENTRATORS



Note: Programs of study names are from course records and may not align perfectly with those published on the state's Department of Career Education website.

How does CTE course taking impact student outcomes?

FIGURE 8 | BENEFITS OF CTE COURSEWORK

Just one additional CTE class above the average means a student is...



3

PERCENTAGE POINTS
MORE LIKELY TO
GRADUATE FROM
HIGH SCHOOL



1

PERCENTAGE POINT
MORE LIKELY TO
ENROLL IN A
TWO-YEAR COLLEGE



2

PERCENTAGE POINTS
MORE LIKELY TO
BE EMPLOYED
AFTER HIGH SCHOOL



\$28

PER QUARTER
BETTER COMPENSATED
IN THE YEAR
AFTER HIGH SCHOOL

What are the benefits of concentrating, are all effects equal?

FIGURE 10 | BENEFITS OF CONCENTRATION

Students who concentrate in a single program of study are...

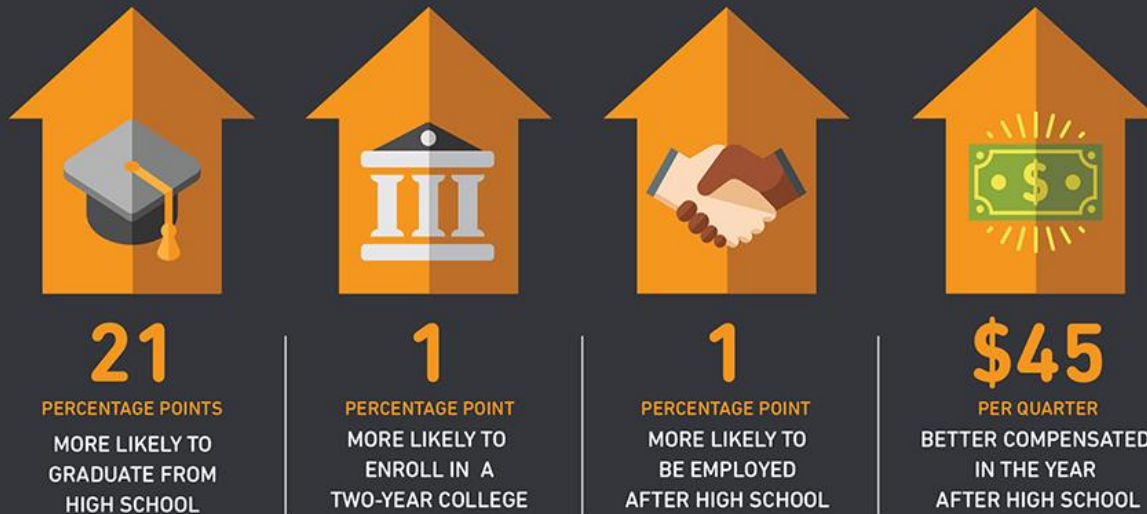
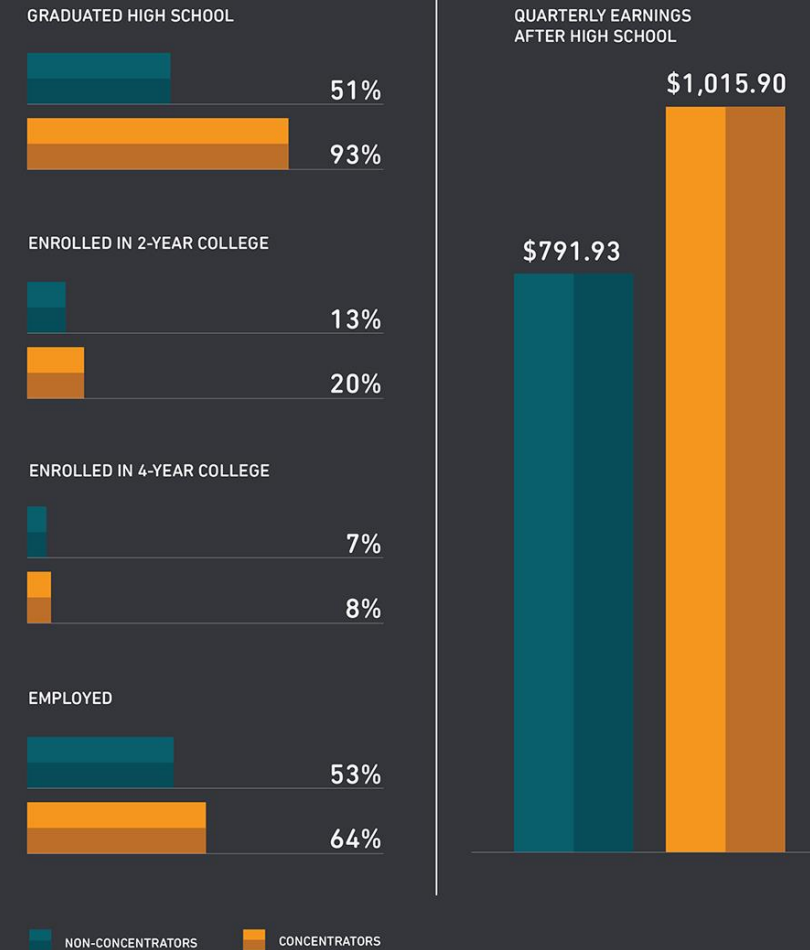


FIGURE 9 | COMPARING OUTCOMES FOR CONCENTRATORS AND NON-CONCENTRATORS



Policy recommendations

- In Arkansas:
 - Stay the course
 - Expand understanding of potential benefits of concentrating
 - Expand high quality dual enrollment
 - Other states and districts:
 - Invest more heavily in high-quality CTE
 - Aligned with labor-market demand with ability to adjust dynamically
 - Encourage pursuit of industry-recognized credentials valued by employers
 - Organize offerings to facilitate completion of a concentration
 - Harmonize dual enrollment to allow for credential “stacking” into college
 - Federal reauthorization of Perkins:
 - Incentivize access to high-quality STEM
 - Allow for a diversity of delivery models
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