

Sector Strategies Taskforce: Career and Technical Education Return on Investment Study

September 9, 2014

House Enrolled Act 1064

- * In March of 2014, the General Assembly unanimously passed and the Governor signed into law HEA 1064 (2014).
- * HEA 1064 requires the Career Council to complete a return on investment and utilization study of career and technical education programs in Indiana.

Funding Levels for Secondary CTE

- * \$100M in state funds.
 - * Included as a categorical in the K-12 tuition funding formula.
 - * Based on a tiered funding structure where funding levels are determined by the wage associated with career in that course and the amount of market demand for that course.
- * \$14.3M in federal Perkins funding.

Funding Levels for Secondary CTE

Market Demand	High Wage	Moderate Wage	Low Wage
High Demand	\$450	\$375	\$300
Moderate Demand	\$375	\$300	\$225
Low Demand	\$300	\$225	\$150
Other Programs--not included in wage/demand categories	\$250		

Funding Levels for Secondary CTE

Course	\$ per credit	Enrollment	Total Expense
Preparing for College and Careers	\$250	29,210	\$7,302,500
Nutrition and Wellness	\$250	19,193	\$4,798,250
Health Science Education I	\$450	3,270	\$3,570,900
(PLTW) Introduction to Engineering Design	\$375	9,249	\$3,547,425
Child Development	\$250	11,618	\$2,904,500
Automotive Services Technology I	\$450	2,526	\$2,839,050
Anatomy & Physiology	\$375	7,122	\$2,789,400
(PLTW) Principles of Biomedical Sciences	\$450	5,658	\$2,637,300
Interactive Media	\$450	3,902	\$2,277,900
Introduction to Agriculture, Food and Natural Resources	\$375	5,894	\$2,251,200

Data Analysis

- * EDSI has done and is doing several cohort-based analyses.
- * Cohorts include:
 - * CTE participant vs. non-CTE participant
 - * CTE concentrator vs. non-CTE concentrator
- * Outcomes include:
 - * High school graduation
 - * College completion
 - * Wage differential



Agenda

- I. ROI Analysis Process
- II. CTE Investment Summary
- III. Analysis and Outcomes
- IV. Initial Recommendations



ROI Analysis Process

- A “concentrator” is defined as either four or six credits taken across a pathway, depending on year enrolled, during high school
- ROI vs Benchmarking
- Organized students and CTE enrollments into six “cohorts”
- Using total state funding by year and total credits funded per year to find total investment in each cohort
- Also compared investments in concentrating students vs non-concentrating students



ROI Analysis Process - Cohorts

	Senior Year	Data Series
Cohort #1	2007 - 2008	Data series begins with 8 th grade in 2003 - 2004
Cohort #2	2008 - 2009	Data series begins with 8 th grade in 2004 - 2005
Cohort #3	2009 - 2010	Data series begins with 8 th grade in 2005 - 2006
Cohort #4	2010 - 2011	Data series begins with 8 th grade in 2006 - 2007
Cohort #5	2011 - 2012	Data series begins with 8 th grade in 2007 - 2008
Cohort #6	2012 - 2013	Data series begins with 8 th grade in 2008 - 2009



ROI Analysis Process

- Identified students in each cohort, and corresponding enrollments
- Identified if each enrollment was as a concentrator
- Identified corresponding group of non-CTE participants for the cohorts
- Examined graduation rates, post secondary enrollments and completions, wages and assessments for all groups

CTE Investment Summary – Six Cohorts combined

All Cohorts (2007-08 Seniors through 2012-13 Seniors)	Non-CTE Participants	All Secondary CTE Participants	Secondary CTE Concentrators (All courses taken by concentrators)	Secondary CTE Non-Concentrators
# of students recorded	222,138	386,877	119,286	267,591
CTE Courses Taken				
Total:	n/a	952,549	370,139	582,410
CTE Courses per student:	n/a	2.46	3.10	2.18
CTE Credits Taken				
Total:	n/a	2,574,984	1,206,594	1,368,390
CTE Credits per student:	n/a	6.656	10.12	5.11
CTE Investment in Cohort				
Total:	n/a	\$ 505,882,344.48	\$ 237,047,920.12	\$ 268,834,424.35
CTE Investment per student:	n/a	\$ 1,307.61	\$ 1,987.22	\$ 1,004.65

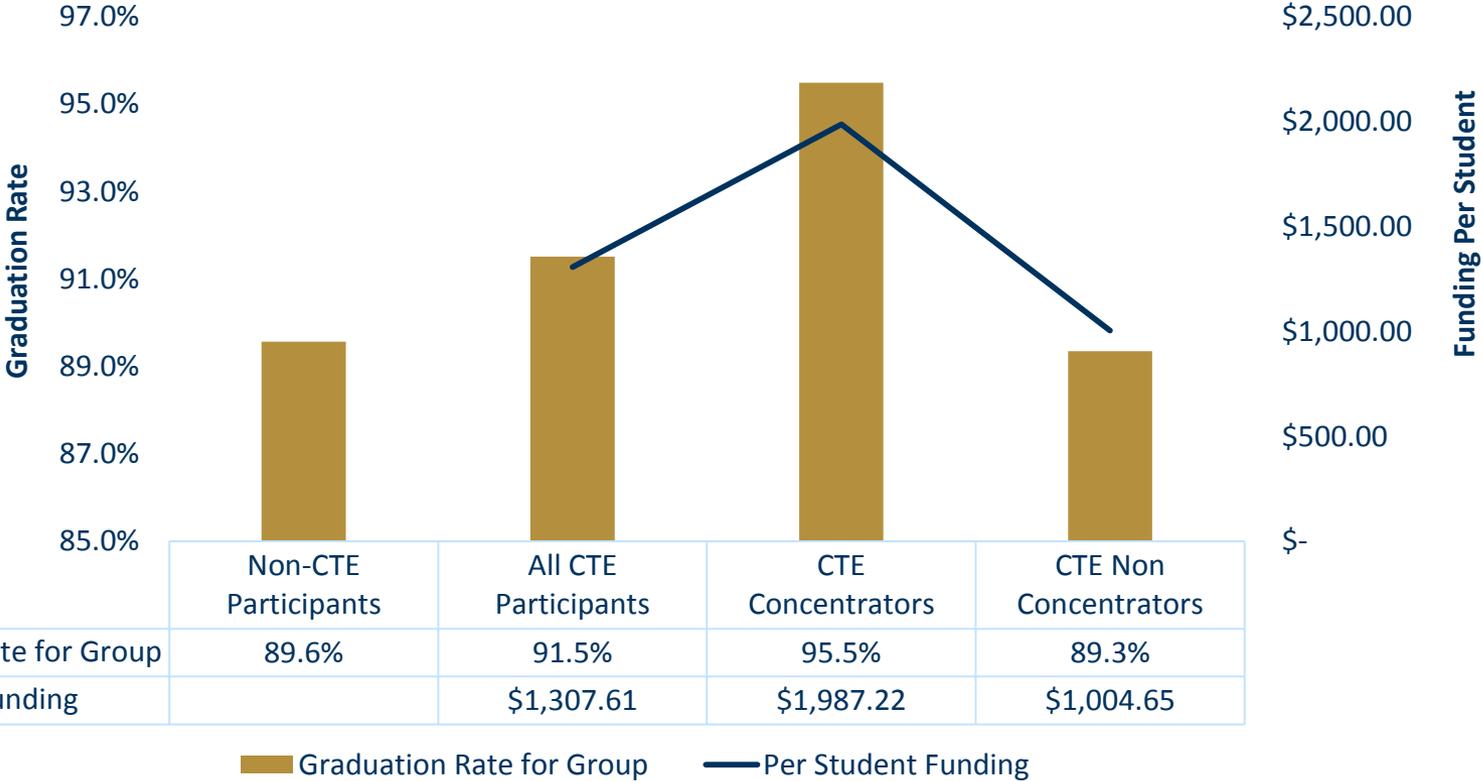


Analysis and Outcomes

- Outcomes – Secondary
 - Graduation rate compared to funding level
 - Diploma types
- Outcomes – Post Secondary
 - Post Secondary Completion
- Outcomes – Wages

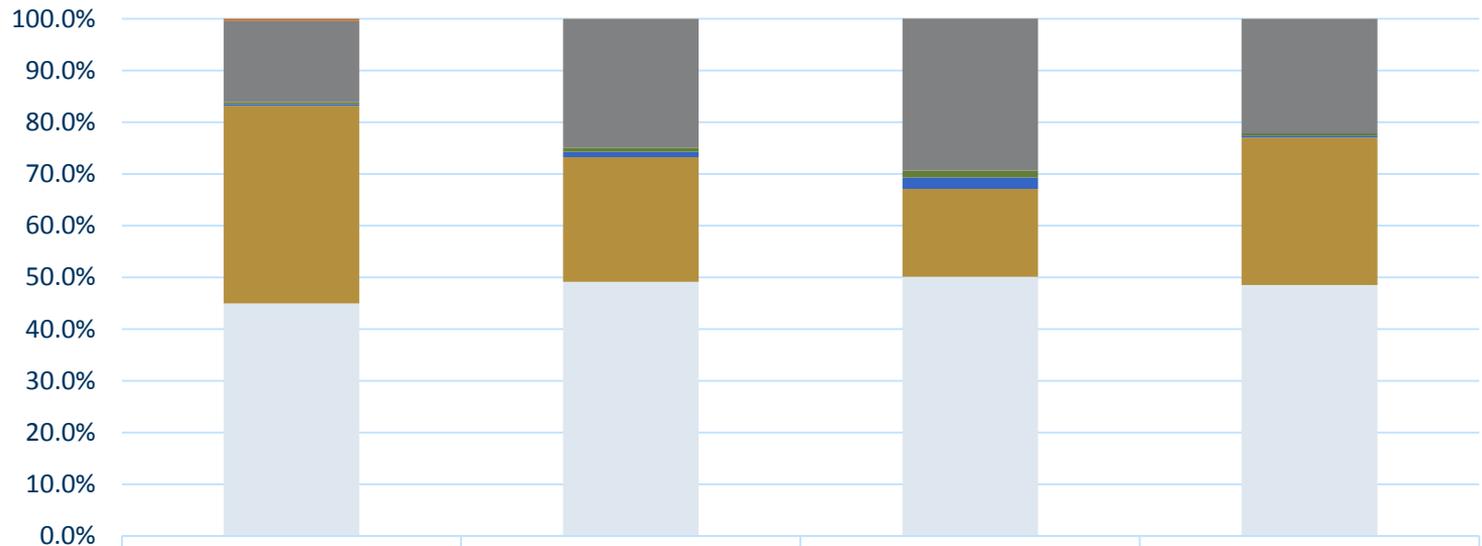
Outcomes – Secondary Graduation Rate

Graduation Rates by Group Compared to Funding



Outcomes – Secondary Diploma Type

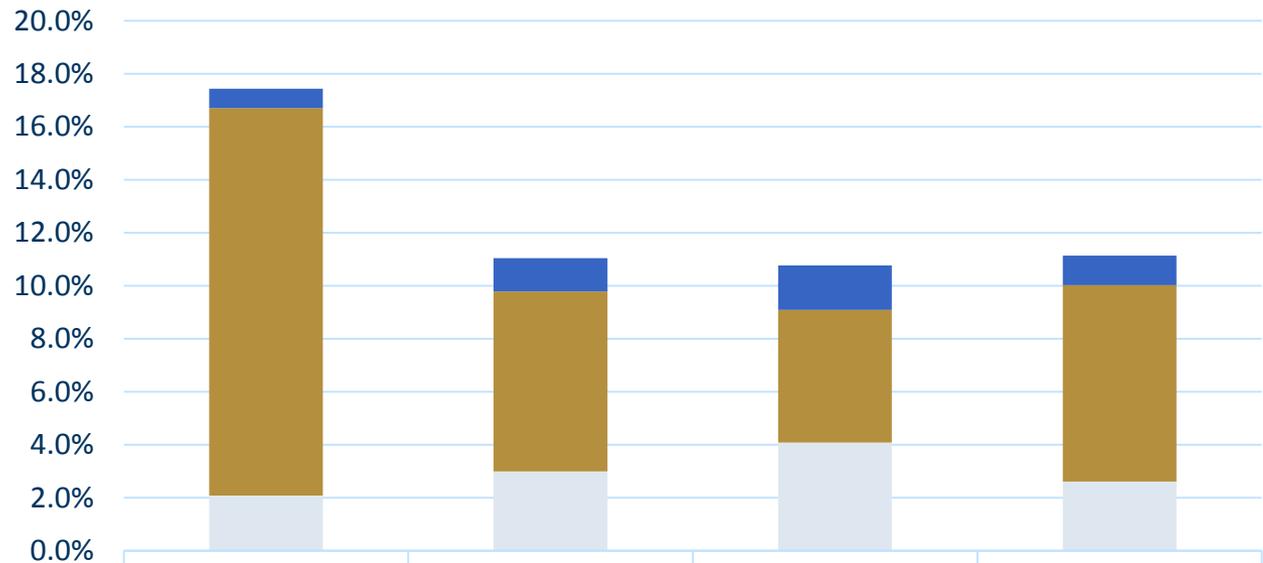
Distribution of Diploma Types¹



	Non-CTE Participants	All CTE Participants	CTE Concentrators	CTE Non Concentrators
International Bac	0.4%	0.02%	0.01%	0.03%
General	15.7%	24.9%	29.3%	22.1%
Core 40 Aca & Tech Honors	0.3%	0.8%	1.4%	0.4%
Core 40 Technical Honors	0.3%	1.1%	2.2%	0.4%
Core 40 Academic Honors	38.2%	24.1%	17.0%	28.5%
Core 40	45.0%	49.1%	50.1%	48.5%

Outcomes – Post Secondary Completion

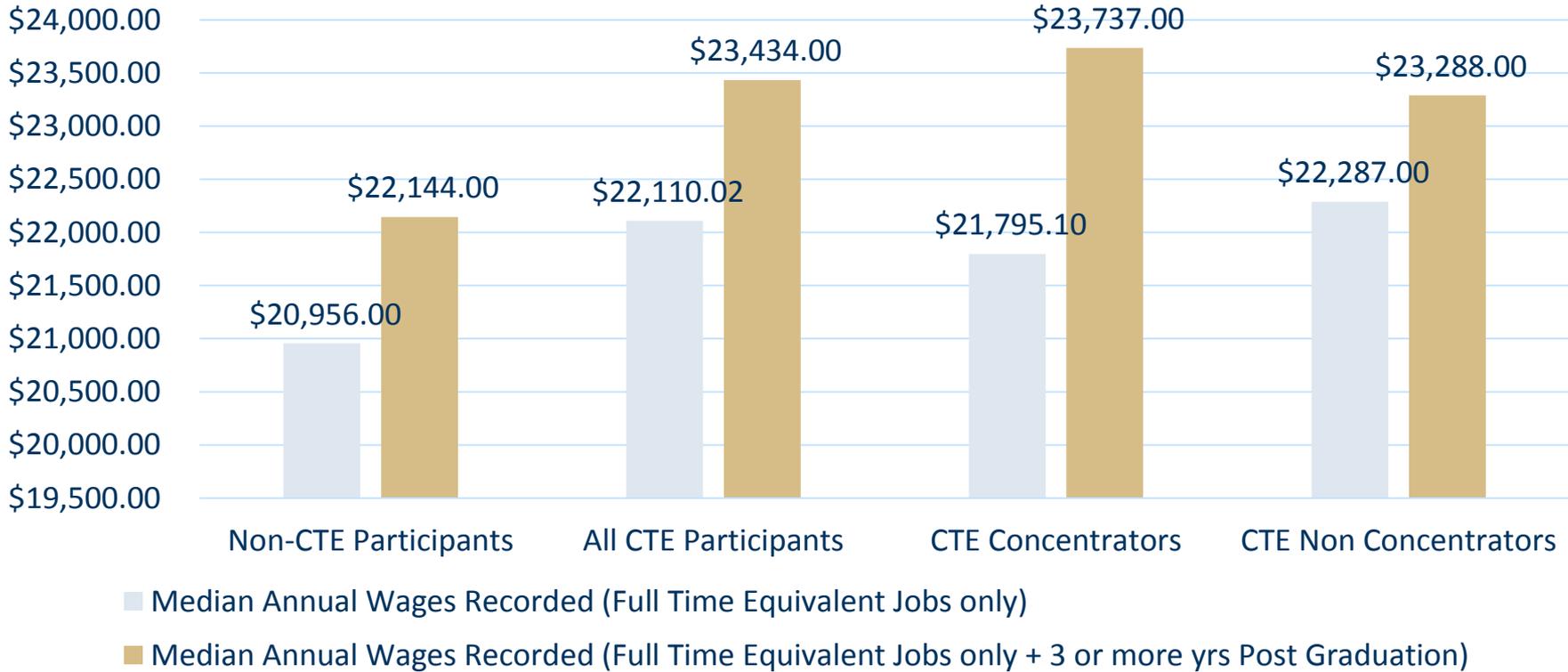
**Post Secondary Completions Reported
(2007-08 and 2008-09 Cohorts Only)**



	Non-CTE Participants	All CTE Participants	CTE Concentrators	CTE Non Concentrators
■ Any Other Post Secondary Completions	0.7%	1.3%	1.7%	1.1%
■ Completing Bachelor's Degrees	14.6%	6.8%	5.0%	7.4%
■ Completing Associate Degrees	2.1%	3.0%	4.1%	2.6%

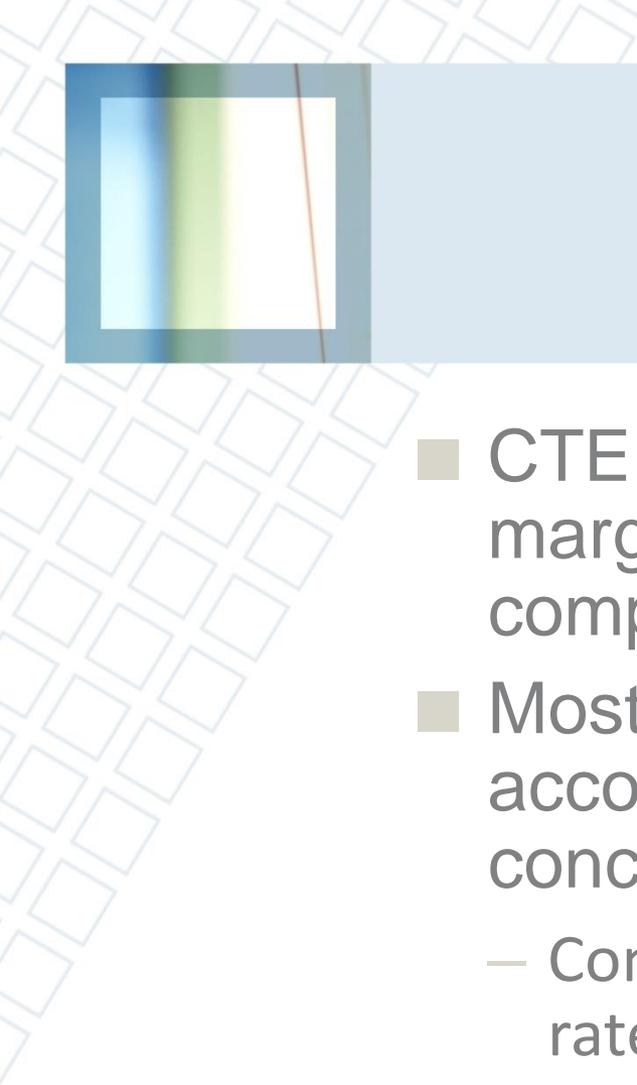
Outcomes - Wages

Median Annual FT Wages Recorded
(All Years and Cohorts)



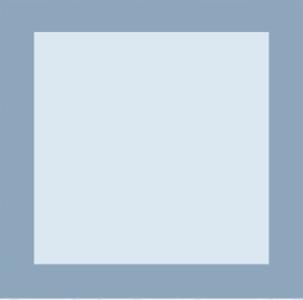
Outcomes - Wages

Reported Full Time Wages	Wage Premium of course wages over "All CTE Participant" wages	Wage Premium of NAICs connected wages over "All CTE Participants" wages	Wage Premium of NAICs connected wages over Course taken in general
Diesel Technology	\$2,352.98	\$3,674.48	\$1,321.50
Precision Machining	\$2,316.98	\$4,693.98	\$2,377.00
Welding Technology	\$2,107.48	\$4,504.98	\$2,397.50
Preparing for College and Careers	\$1,061.98	n/a	n/a
Automotive Services Technology I	\$1,059.48	\$2,507.48	\$1,448.00
Advanced Manufacturing / Mechanical Engineering	\$732.48	\$3,889.98	\$3,157.50
Introduction to Agriculture, Food and Natural Resources	\$648.48	\$2,913.98	\$2,265.50



Summary of Outcomes

- CTE Participants as a whole have marginally better Graduation Rates compared to non-participants
- Most of CTE difference in performance accounted for by difference between concentrators and non-concentrators
 - Concentrators graduate at significantly higher rates
 - CTE participants have smaller % of Honors diplomas, higher % of general diplomas

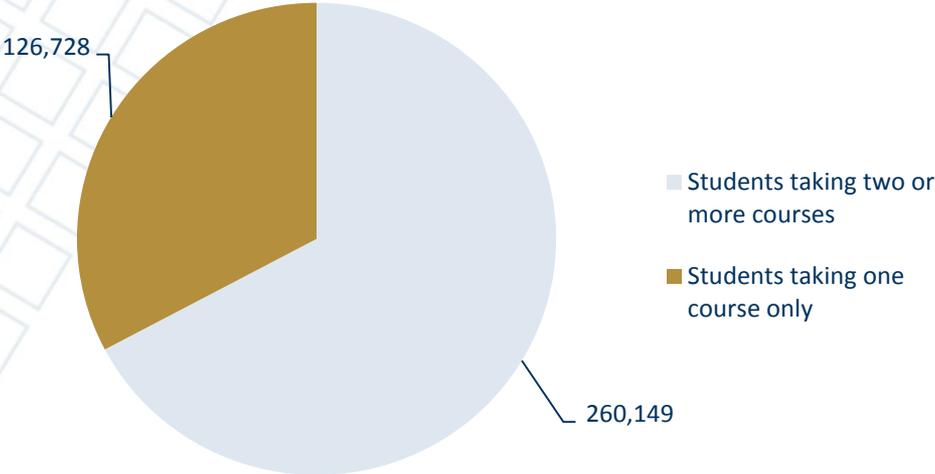


Initial Recommendations

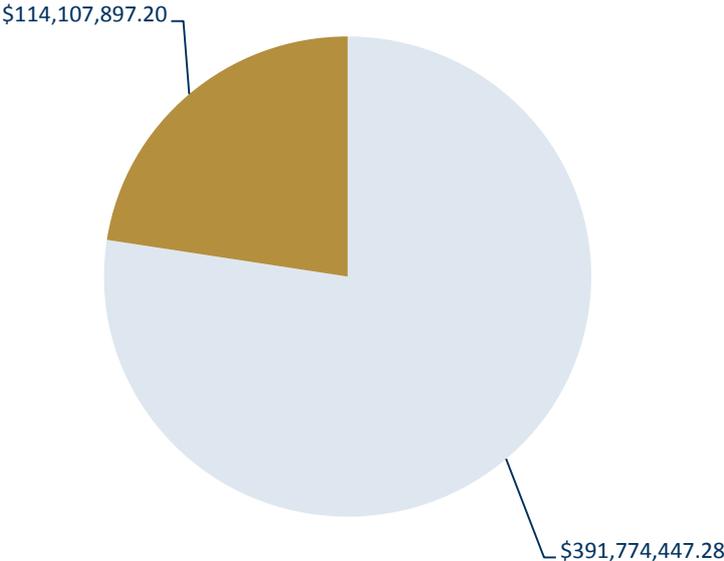
- Focus opportunities on "concentrators"
- Align concentrations with industry demand for jobs
- Track placement/employment in related field
- Evaluate potential outcomes based on concentrations - graduation rates, post secondary completion, earning industry recognized credential, wages

Individual Courses Compared to Multiple Courses

Students



Funding



Value Statements

- * Career and technical education has a positive impact on students who participate.
- * Career and technical education is a critical tool in ensuring that secondary students are prepared for college and career when they leave high school.
- * State funding should incentivize better student outcomes, rather than focus solely on inputs.

Recommendations

- * Career and technical education programs should place students and student outcomes at the center of their focus.
- * Career and technical education programs and courses of study should align their delivery with post-secondary and workforce needs.
- * Career and technical education programs should recognize the value of work-based learning.

Recommendations

- * Indiana should, to the extent possible, differentiate its emphasis on CTE programs based on regional and local workforce needs.
- * The State and local CTE programs should create strong partnerships and engagement with businesses and community organizations.

What's next?

- * Career Council will consider the Sector Strategies Taskforce resolution at the September 17th Career Council meeting.
- * The Sector Strategies Taskforce will approve priority sectors in the coming months, which will help focus where CTE funding should be directed.