

# National Research Center for Career and Technical Education

## Career and Technical Education Course Taking Patterns of High School Graduates: Exploring the Participation in the Most Frequent Sets of Occupational Areas

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# SYNOPSIS OF SCENES

ACT I.—The group of non-CTE concentrators

ACT II.—A Typology to understand the high school CTE experience

ACT III.—Non-concentrators and most frequent occupational combinations

# Act I.—The group of non-CTE concentrators

# Purpose

- Participation in CTE
- We know who the “concentrators” are
- We also know who the “academic” are
- What about those not making the classification?
  - Who are they?
  - What type of CTE experience are they building?
  - No research focused in this group

# Let's take a look

Grade	Student 1	Student 2	Student 3	Student 4
10 <sup>th</sup>	Food tech I	Horticulture	Introduction to computers	Word processing
11 <sup>th</sup>	Marketing I	Business management	CAD I	Accounting I
12 <sup>th</sup>	Marketing II	Marketing I	CAD II	Accounting II
Traditional Descriptor	Experimenter	Experimenter	Experimenter	Concentrator

# Why this group?

- Not received much attention from research or policy-makers
- Uncertainty about their intents, interests, and goals
- Similarities with “CTE concentrators”
- Often used for comparison with both the “academic” and CTE “concentrators”

# Two issues

- Do they acquire any skills at all by not focusing on an area?
  - for work?
  - for postsecondary education?
- Or are they articulating a set of skills that is more meaningful for them—their intents, interests, goals?

- ACT II.— A Typology to understand the high school CTE experience



# Common perspective about participation in CTE



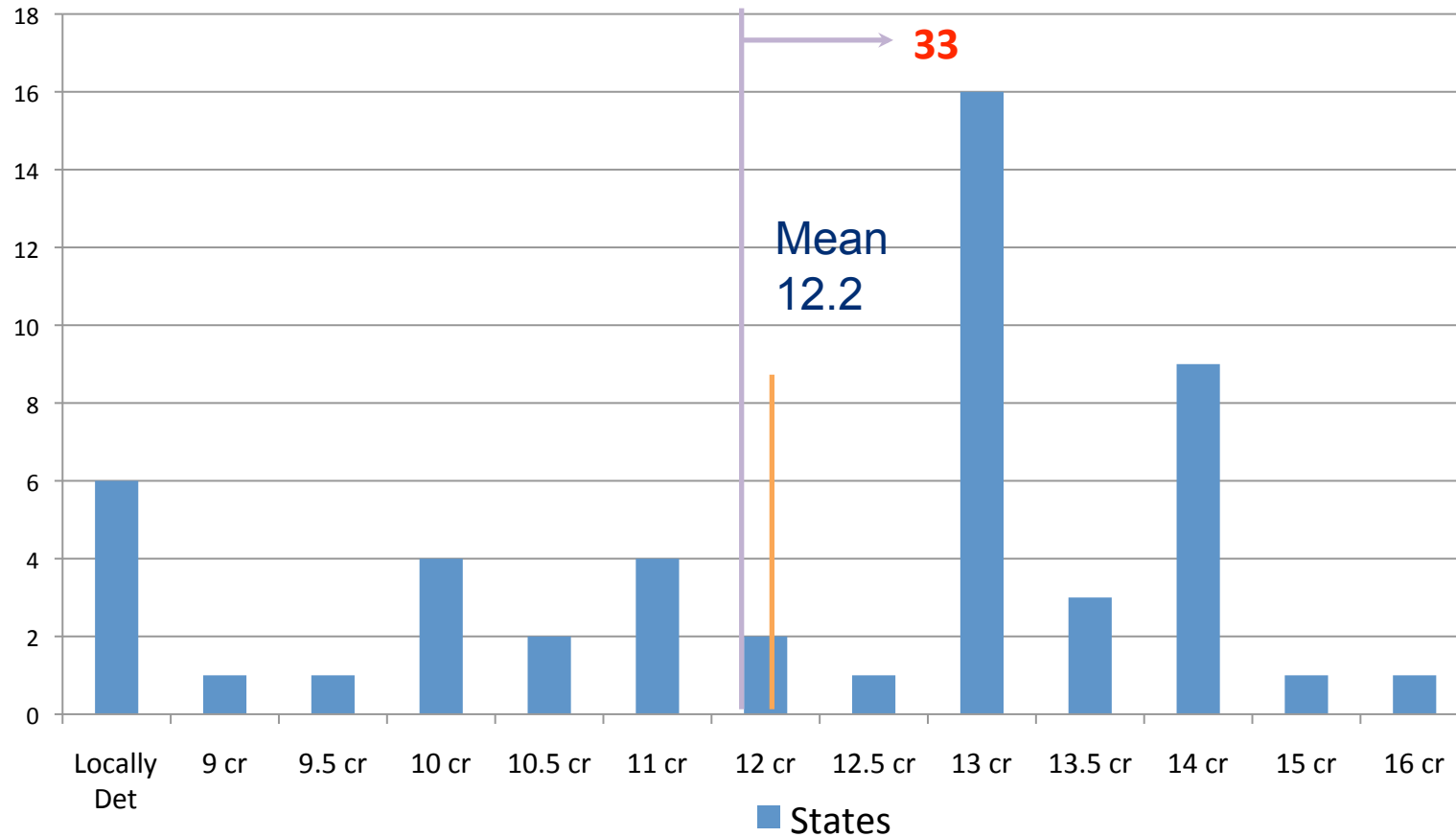
		CTE CURRICULUM	
		NO	YES
ACADEMIC CURRICULUM	NO	General	CTE
	YES	Academic	Dual

# But CTE is not what it used to be ...

- Graduation requirements
- Participation patterns
- Occupations expansion
  - Variations within each occupation
  - Career pathways and clusters

# Current Graduation Requirements and CTE

## Academic Credits and Graduation Requirements of States



# Current Participation Levels in CTE

- 92% of public high school students take one *course* in CTE (class of 2005)
  - Consistent for past 15 years
- 4.01: Average number of CTE credits earned by all public high school graduates (2005)



# Occupational areas

- Few occupational areas at the turn of the century
- Data prior to 2005
  - 10 OA
  - 18 disaggregated
- Data after 2005
  - 11 OA
  - 20 disaggregated

# Therefore, a student's High School experience may look like this instead

**STANDARD CREDIT REQUIREMENTS**  
**(4E, 3M, 3S, 3SS)**  
(NCES-HSTS 2011)



**HIGH LEVEL MATH AND SCIENCE**  
(4E, 3M, 3S, 3SS, 1FL;  
Geom & Alg I or II or higher, 2 Bio, Che, Phys)

**CTE COURSE TAKING**  
(UP TO LESS THAN 3 CREDITS) OR HIGH INTENSITY CTE (3 OR MORE CR, NOT FULFILLING OR FULFILLING AN OCCUPATIONAL AREA) 14

# NRCCTE Typology

- Looks at the whole spectrum of CTE credit taking
- Based on 0, 1 and 3 credits (8 basic categories)
- Different levels: respond to different intents, interests, and plans



- ACT III.—Non-concentrators and most frequent occupational combinations



# CTE and ELS:2002

- Self-reporting data (survey)
- Transcript data (restricted data)
  - Academic courses
  - CTE courses
  - Thirteen occupational areas
- Representative sample of students in 10<sup>th</sup> grade in 2002

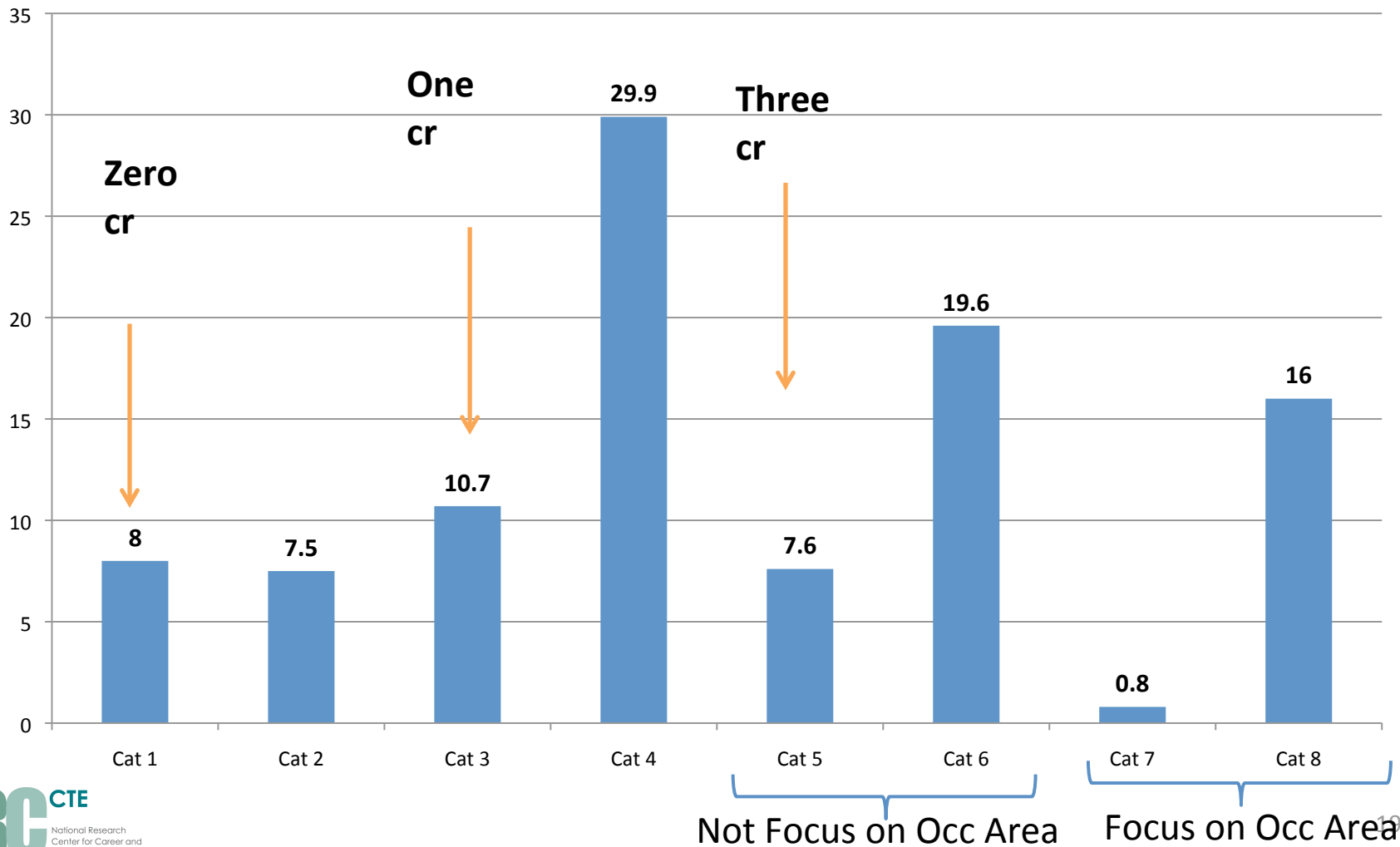
# A Note about National Databases

- Rich sources of information
- Extremely useful for educational research
- Comprehensive samples
  - Specificity and complexity of CTE

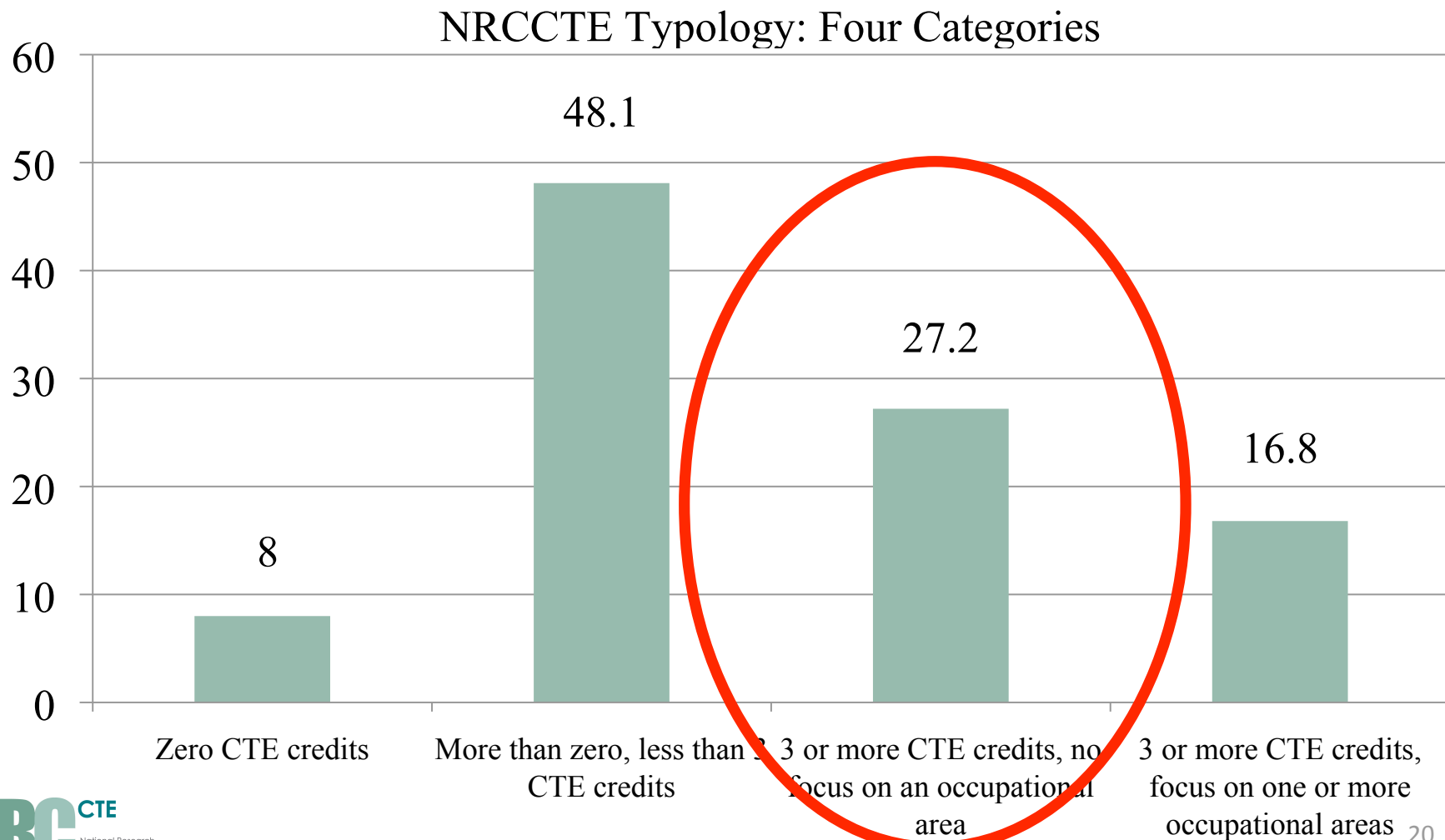


# Typology of CTE Credit Taking

Typology of CTE Credit Taking (Percentages)



# Typology: Four Basic Categories



# Guiding research questions

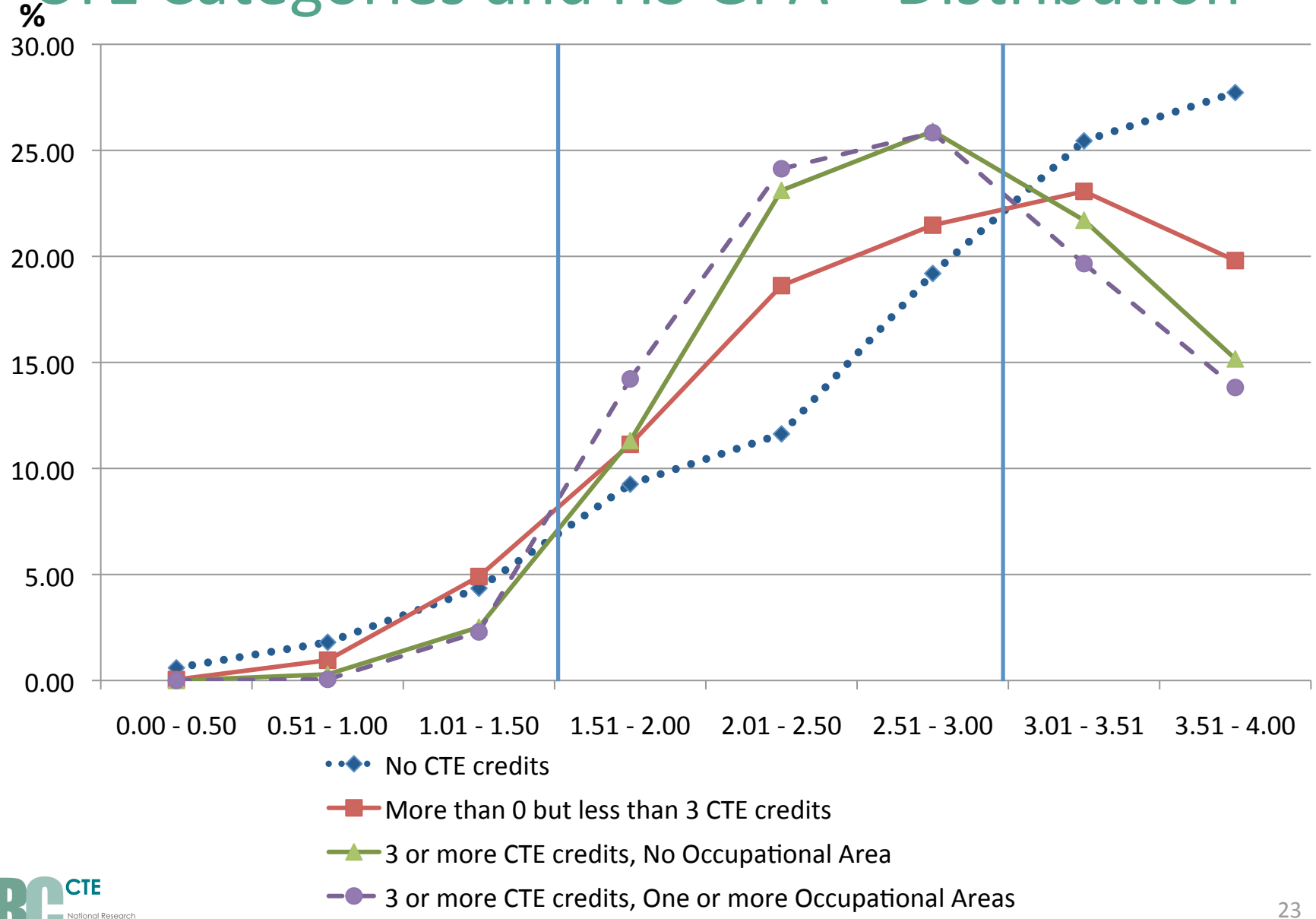
- For the group that takes 3 or more CTE credits and does not focus on any occupation
- *What sets of occupational areas are chosen?*
- *What is the relationship between those patterns and postsecondary education?*



# Demographics

	Zero CTE Credits	More than Zero but less than 3 CTE Credits	3 or More CTE Credits, no Occupational Area	3 or More CTE Credits, One or More Occupational Areas
Female	57.6	53.5	48.9	44.7
Male	42.4	46.5	51.1	55.3
White	61.2	54.2	58.9	63.1
Black	13.7	13.4	12.4	14.6
Hispanic	14.6	16.4	14.2	11.5
Asian	5.7	5.5	3.0	2.3
Other	4.8	10.6	11.5	8.5
SES-Q1 (Low)	17.5	22.3	24.8	28.9
SES-Q2	18.1	23.4	28.9	29.6
SES-Q3	28.3	25.7	26.6	25.0
SES-Q4 (High)	36.1	28.6	19.7	16.5

# CTE Categories and HS GPA—Distribution



# CTE and HS Achievement

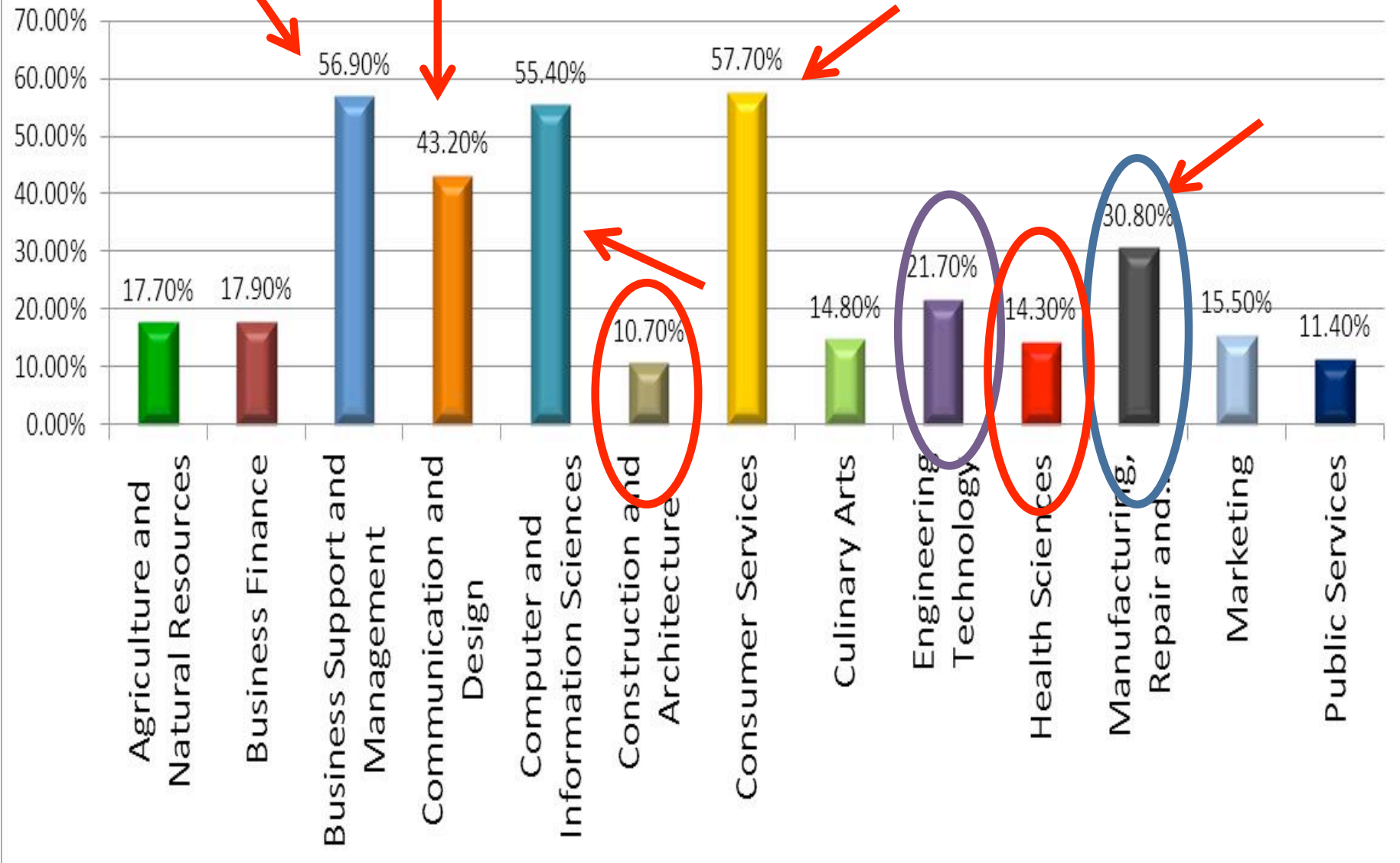
	No CTE credits	More than 0 but less than 3 CTE credits	3 or more CTE credits, No Occupational Area	3 or more CTE credits, One or more Occupational Areas
GPA Mean	2.91	2.78	2.74	2.69
Basic Math	3.98%	2.67%	2.28%	5.80%
Algebra 2	36.05	43.44	51.89	58.82
Beyond Algebra 2	59.97	53.90	45.83	35.38
Basic Science	2.60%	1.48%	1.19%	3.50%
Biology	44.78	52.23	59.75	60.46
Biology or higher or equivalent	52.62	46.30	39.06	36.04



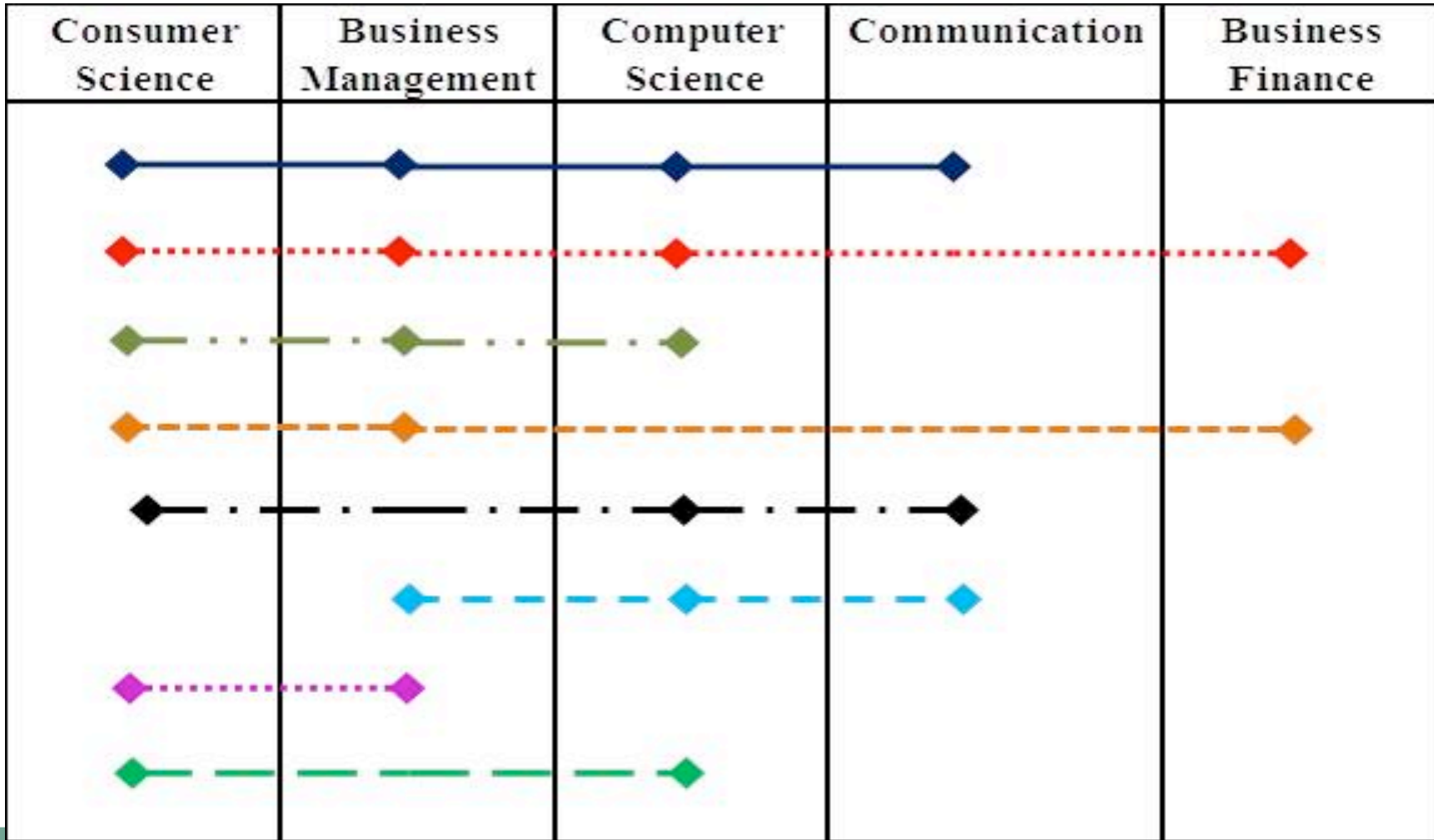
# Almost there

- Why to come to this point—and not focusing?
- What is the value?
- Recap:
  - 3 or more CTE credits (minimum to acquire skills)
  - On an occupational area

## CTE Non-Concentrators and Occupational Areas



# Most frequent sets of occupation combinations



## CTE Non-Concentrators and Postsecondary

CTE Sets of Occupational Area Combinations	Less than 2-yr	2-yr College	4-yr College
Business Management, Computer Science, Consumer Services	32.4%	30.1%	37.5%
Business Management, Communication, Consumer Services	27.5%	32.7%	39.8%
Business Management, Communication, Computer Science, Consumer Services	25.2%	33.3%	41.4%
Communication, Computer Science, Consumer Services	25.7%	31.5%	42.8%
Business Management, Communication, Computer Science	14.8%	29.6%	55.6%
Business Management, Consumer Services	31.9%	28.8%	39.2%
Computer Science, Consumer Services	32.5%	34.5%	33.0%
Business Finance, Business Management, Computer Science, Consumer Services	24.0%	23.1%	52.9%
Other CTE course-taking patterns	28.1%	28.4%	43.5%

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# Correspondence

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