

Nebraska Career Education: A Dropout Prevention Strategy

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NEBRASKA DEPARTMENT OF EDUCATION



Presentation Objectives

1. Understand the key risk factors for school dropout and effective strategies for dropout prevention
2. Identify, demographically, just who is the Nebraska Career Education Student
3. Analyze dropout status across student ethnicity and career education status
4. Review a multivariate analysis of dropout status controlling for an array of student demographic and programmatic variables



Key Risk Factors for School Dropout (Individual Domain)

- Individual Background Characteristics:
 - Has a learning disability or emotional disturbance
- Early Adult Responsibilities:
 - High number of work hours
 - Parenthood
- School Performance:
 - Low achievement
 - Retention/over-age for grade
- Social Behavior:
 - Misbehavior
 - Early aggression
- Social Attitudes, Values, & Behavior:
 - High-risk peer group
 - High-risk social behavior
 - Highly social active outside of school
- School Engagement:
 - Poor attendance
 - Low educational expectations
 - Lack of effort
 - Low commitment to school
 - No extracurricular activities



Key Risk Factors for School Dropout (Family Domain)

- Family Background Characteristics:
 - Low socioeconomic status
 - High family mobility
 - Low education level of parents
 - Large number of siblings
 - Not living with both natural parents
 - Family disruption
- Family Engagement / Commitment to Education:
 - Low educational expectations
 - Sibling has dropped out
 - Low contact with school
 - Lack of conversations about school

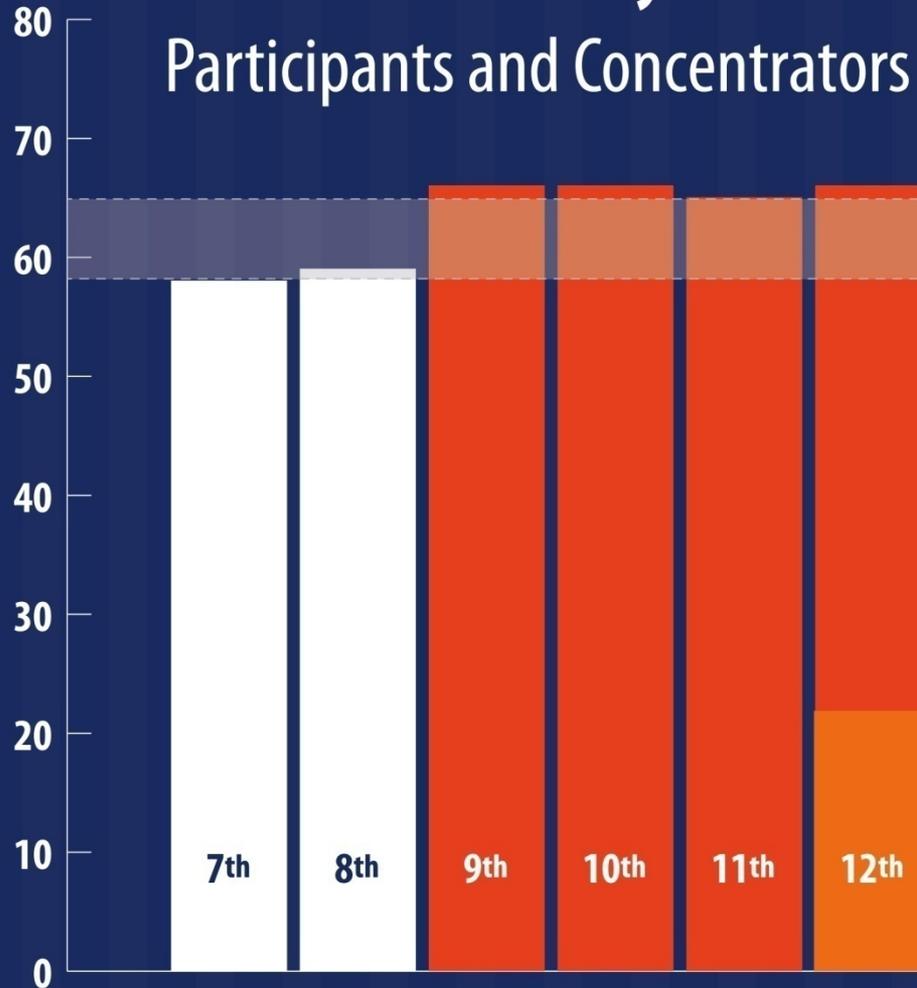


Effective Strategies for Dropout Prevention

- School and Community Perspective:
 - Systemic Renewal
 - School-Community Collaboration
 - Safe Learning Environments
- Basic Core Strategies:
 - Mentoring/Tutoring
 - Service Learning
 - Alternative Schooling
 - After-School Opportunities
- Early Interventions:
 - Family Engagement
 - Early Childhood Education
 - Early Literacy Development
- Making the Most of Instruction:
 - Professional Development
 - Active Learning
 - Educational Technology
 - Individualized Education
 - Career and Technical Education (CTE)



Descriptive Statistics: CTE Students by Grade Participants and Concentrators

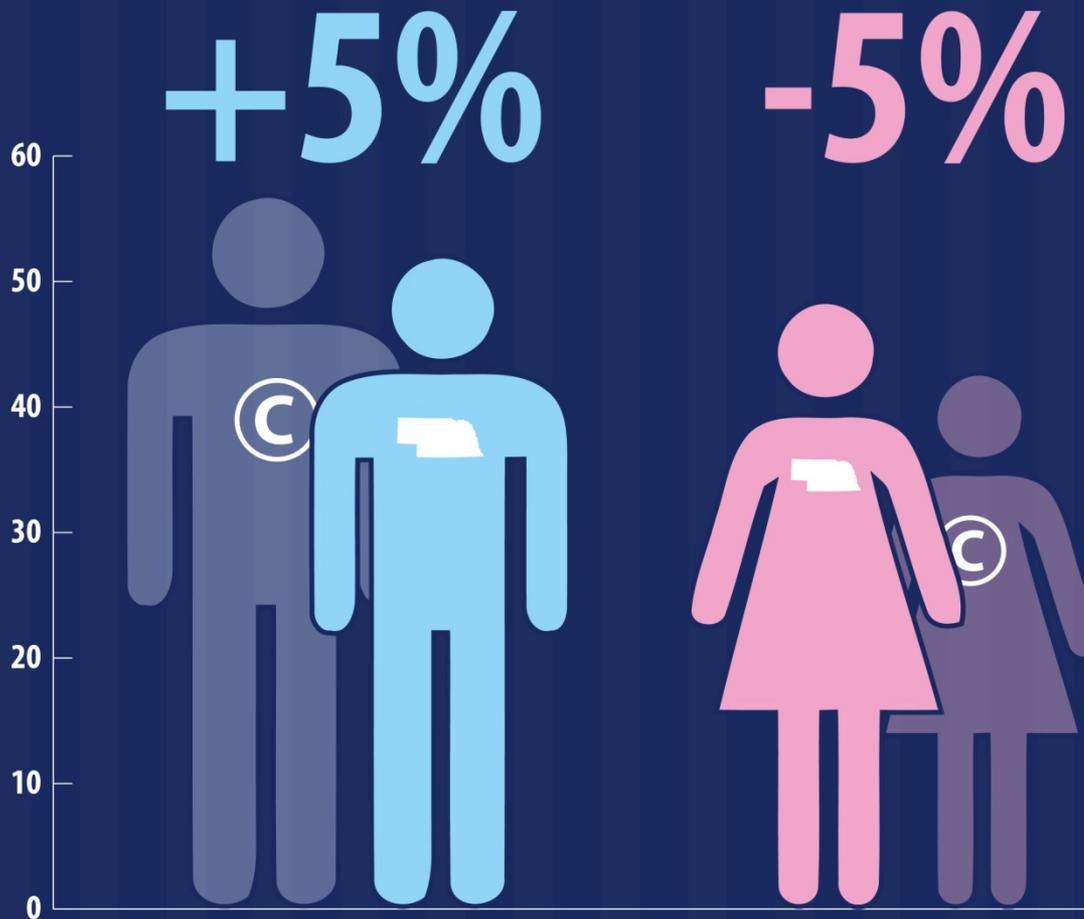


7.25%
average increase in Participants
between Junior High
& High School

2/3
of all Nebraska High School
Seniors are CTE Participants

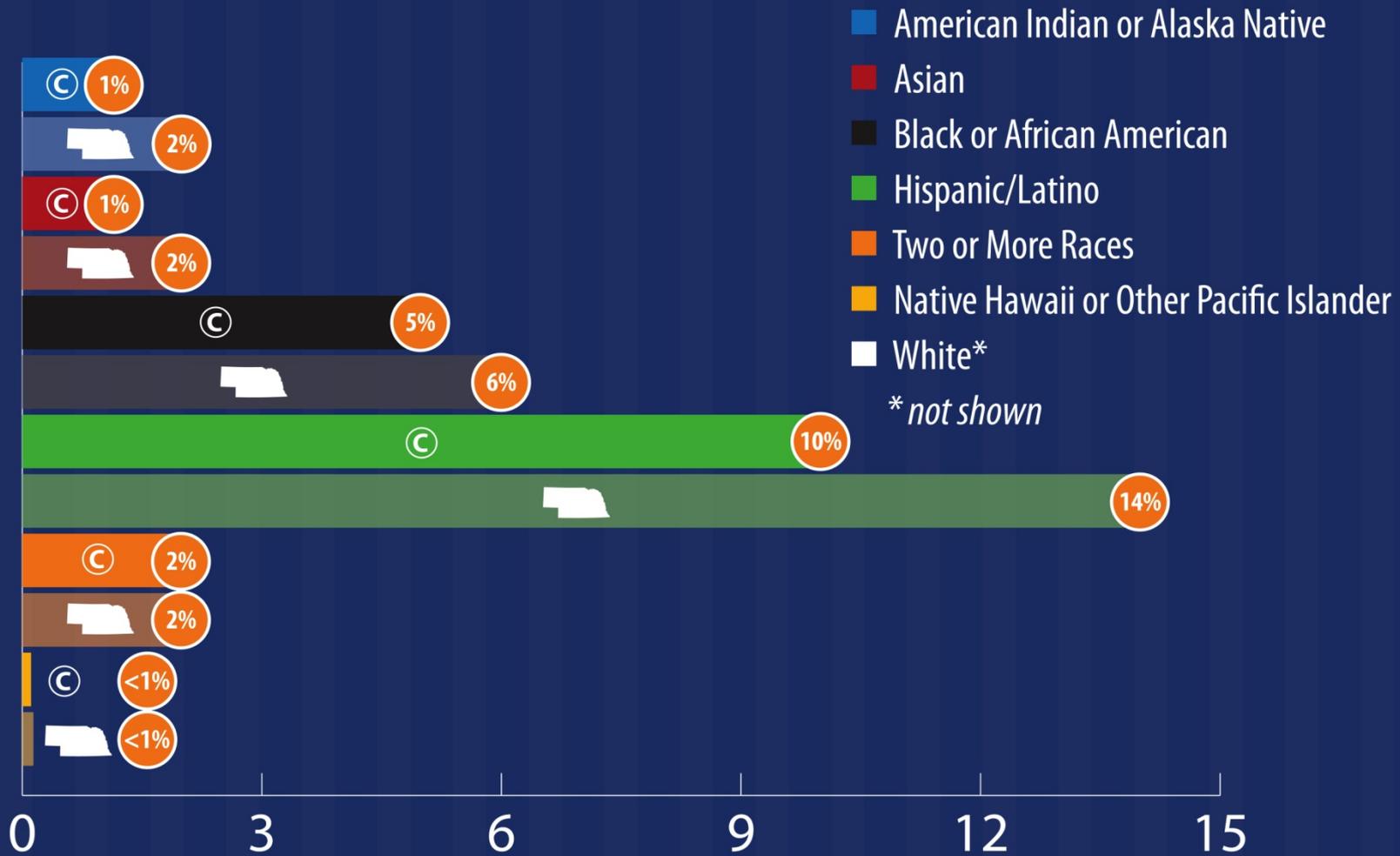
1/3
of all Nebraska High School
Seniors are CTE Concentrators





Descriptive Statistics: Gender
Concentrators vs. All High School Seniors

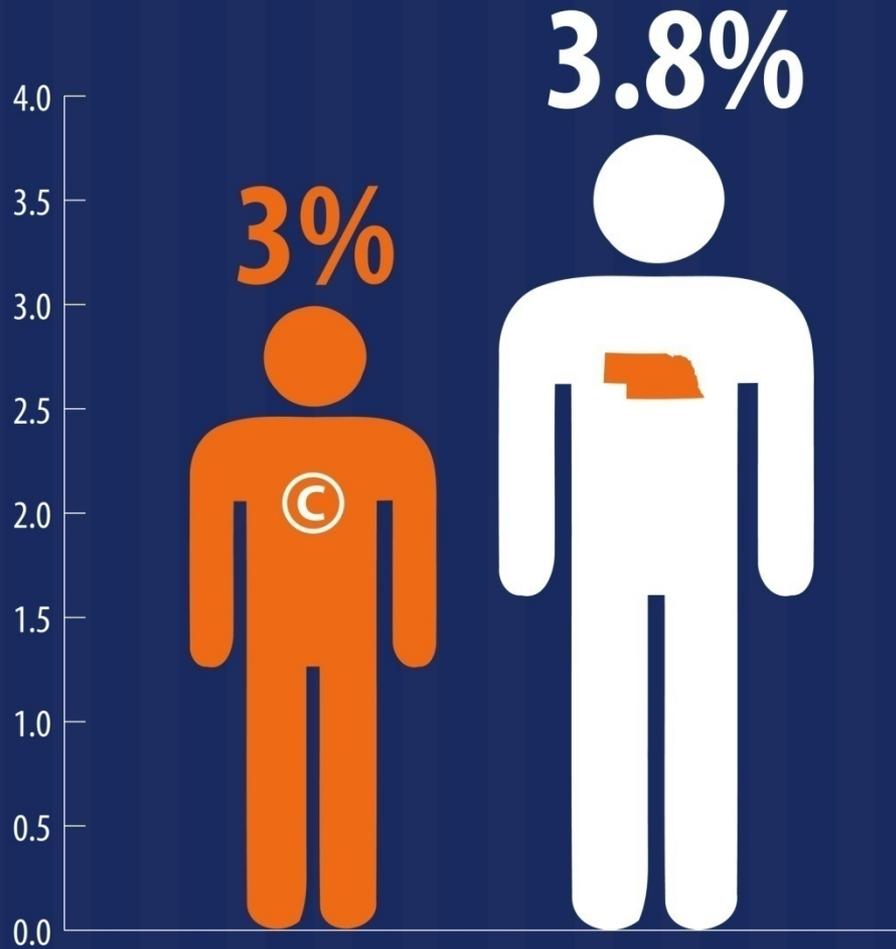




Descriptive Statistics: Ethnicity

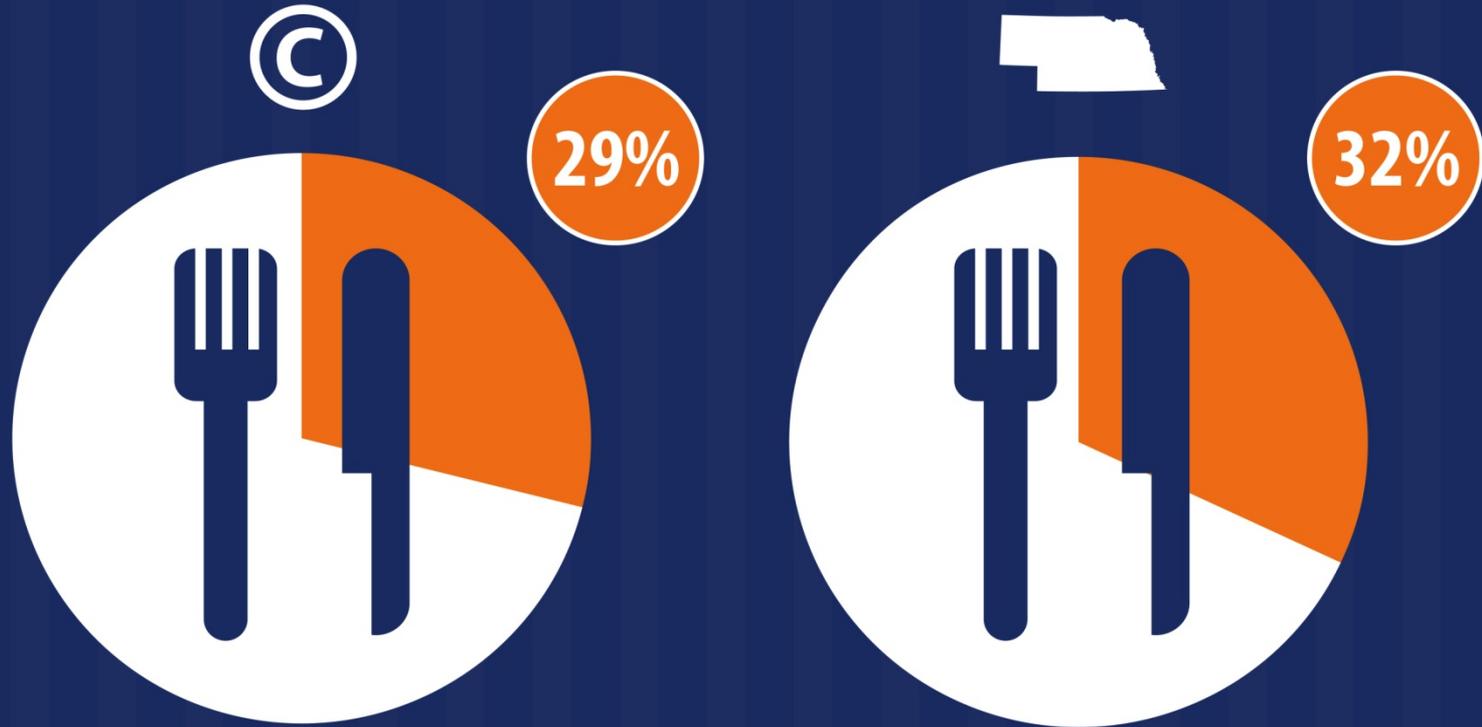
Concentrators vs. All High School Seniors





Descriptive Statistics: Immigration Status Concentrators vs. All High School Seniors





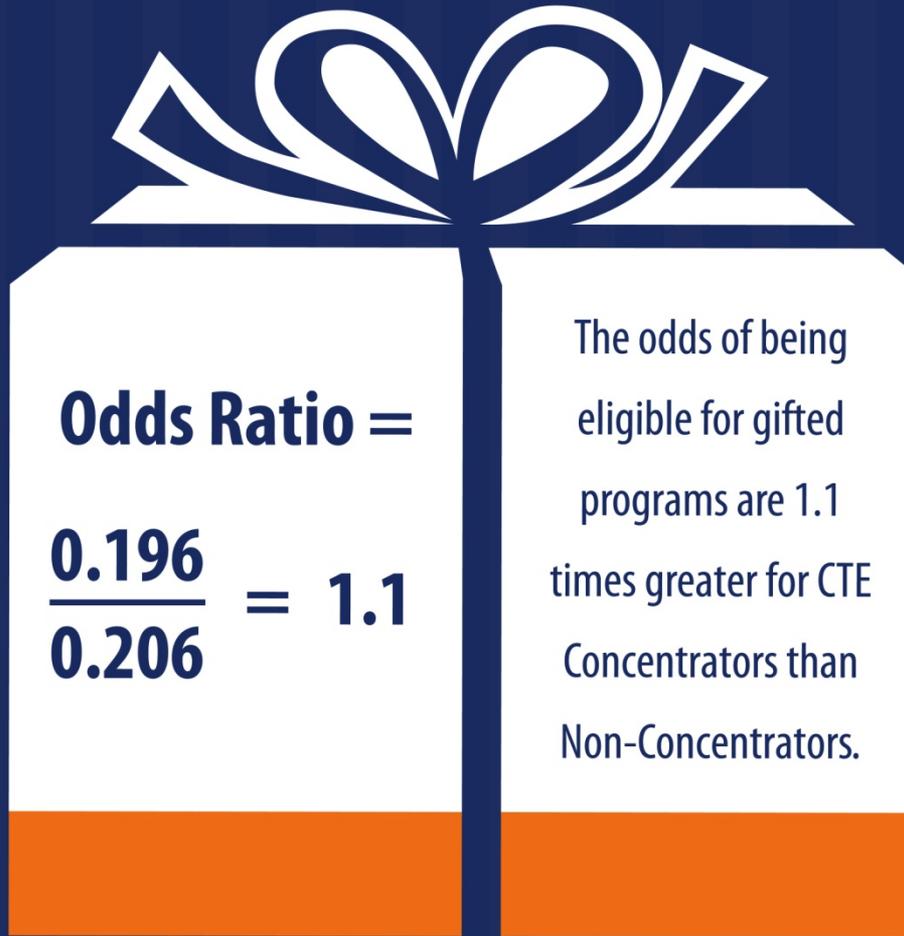
Descriptive Statistics: Food Program Eligibility Concentrators vs. All High School Seniors





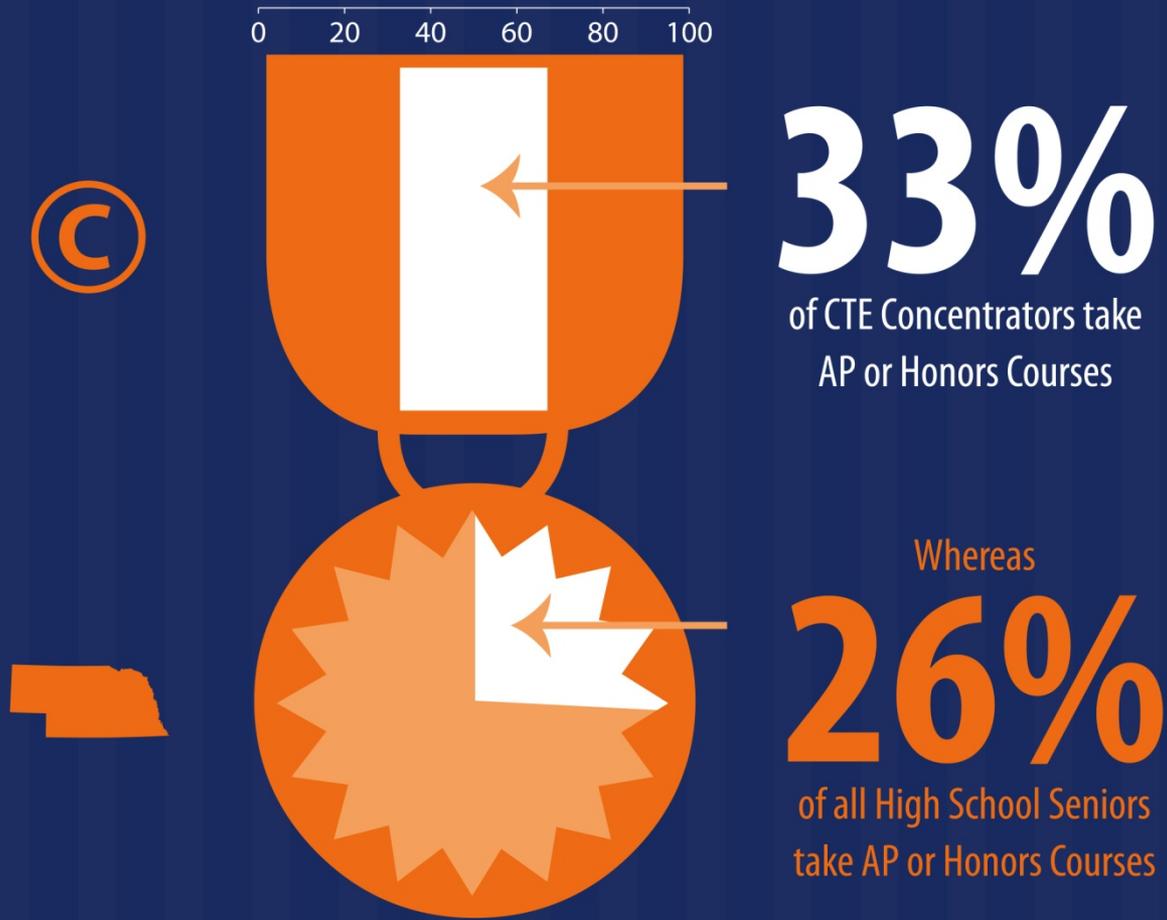
Descriptive Statistics: Gifted Eligibility All High School Seniors vs. Concentrators





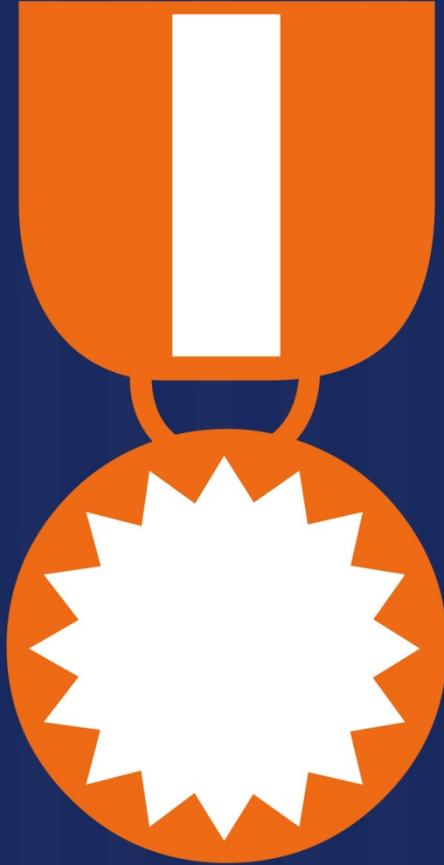
Descriptive Statistics: Gifted Eligibility Concentrators vs. Non-Concentrators





Descriptive Statistics: AP or Honors Courses Concentrators vs. All High School Seniors





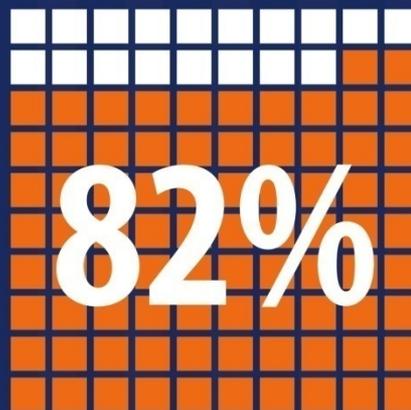
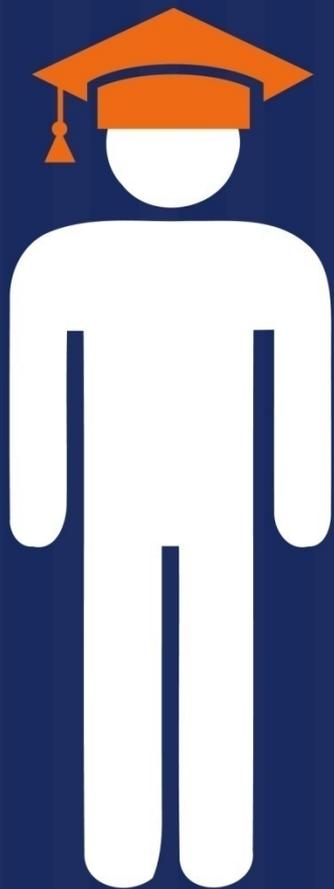
The odds of participating in AP or Honors Courses are 1.6 times greater for CTE Concentrators than Non-Concentrators.

Odds Ratio =

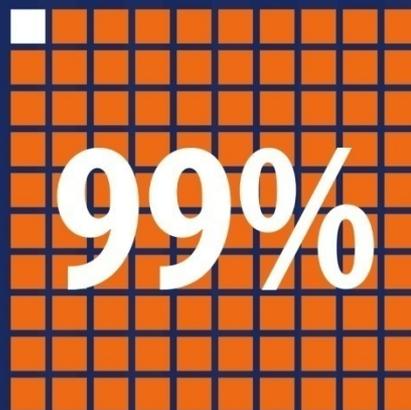
$$\frac{0.485}{0.295} = 1.6$$

Descriptive Statistics: AP or Honors Courses Concentrators vs. Non-Concentrators





Whereas

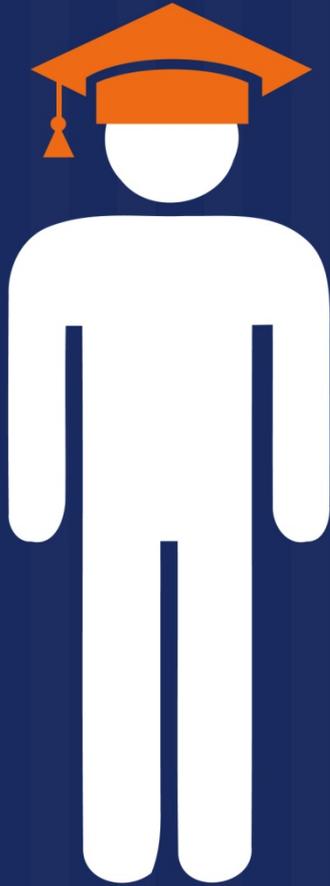


of Nebraska high school seniors completed an approved program of study and met district/system requirements for a high school diploma

of CTE Concentrators completed an approved program of study and met district/system requirements for a high school diploma

Descriptive Statistics: Completer with Diploma All High School Seniors vs. Concentrators





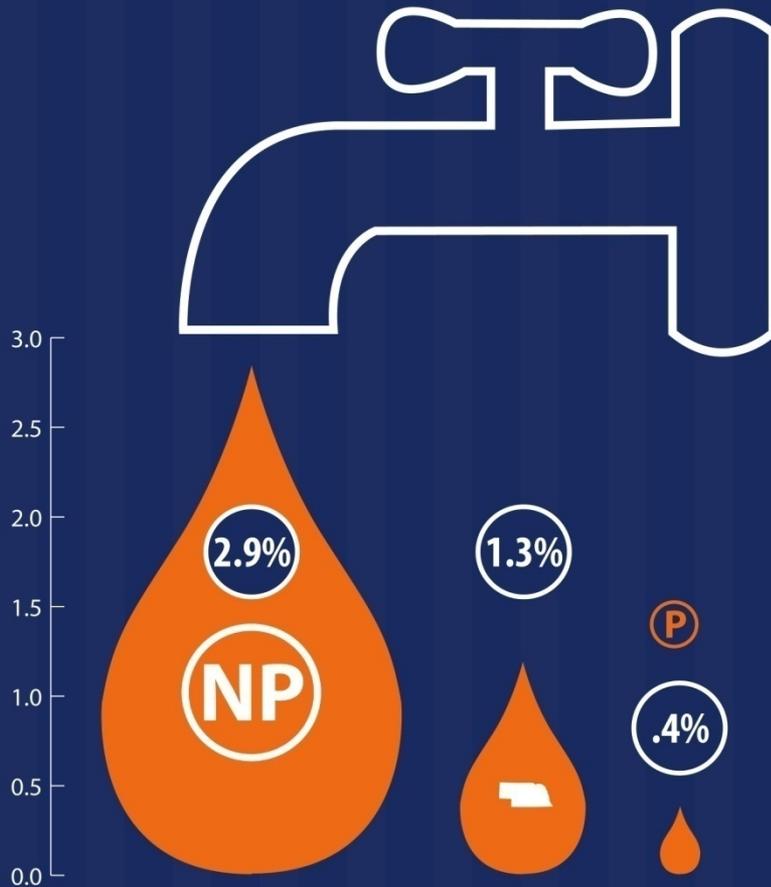
The odds of completing an approved program of study and meeting district/system requirements for a high school diploma are 25.6 times greater for CTE Concentrators than students not concentrating in CTE.

Odds Ratio =

$$\frac{72.09}{2.81} = 25.6$$

Descriptive Statistics: Completer with Diploma Concentrators vs. Non-Concentrators





0.4% of students grades 7-12 participating in Career Education dropped out of school

Compared to

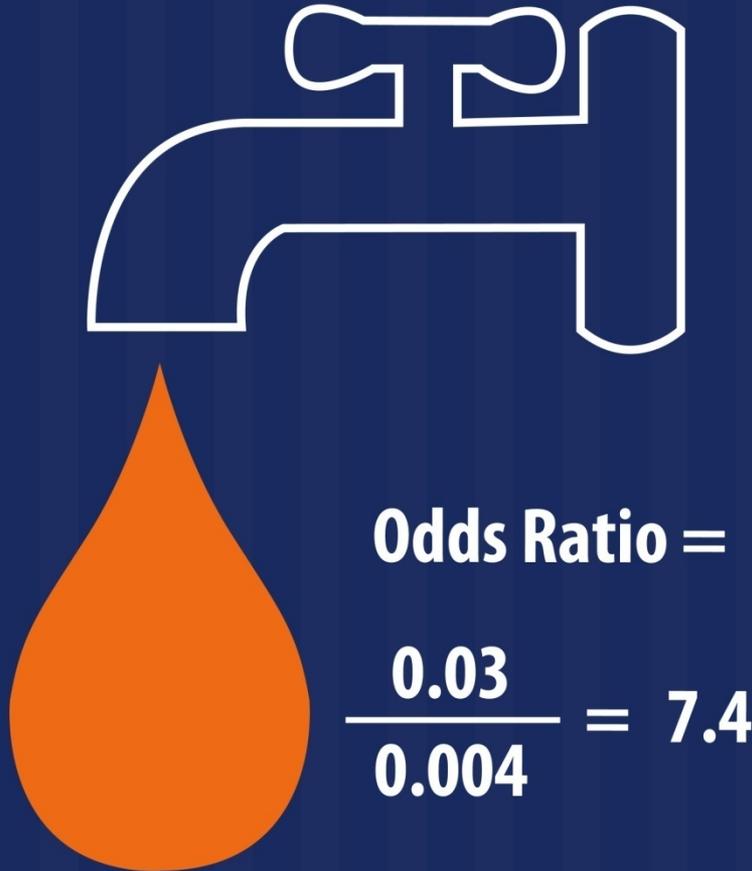
2.9% of students grades 7-12 *not* participating in Career Education.

Overall, 1.3% of all Nebraska students grades 7-12 dropped out of school.

Descriptive Statistics: Dropouts

Non-Participants, All Students Grades 7-12, Participants

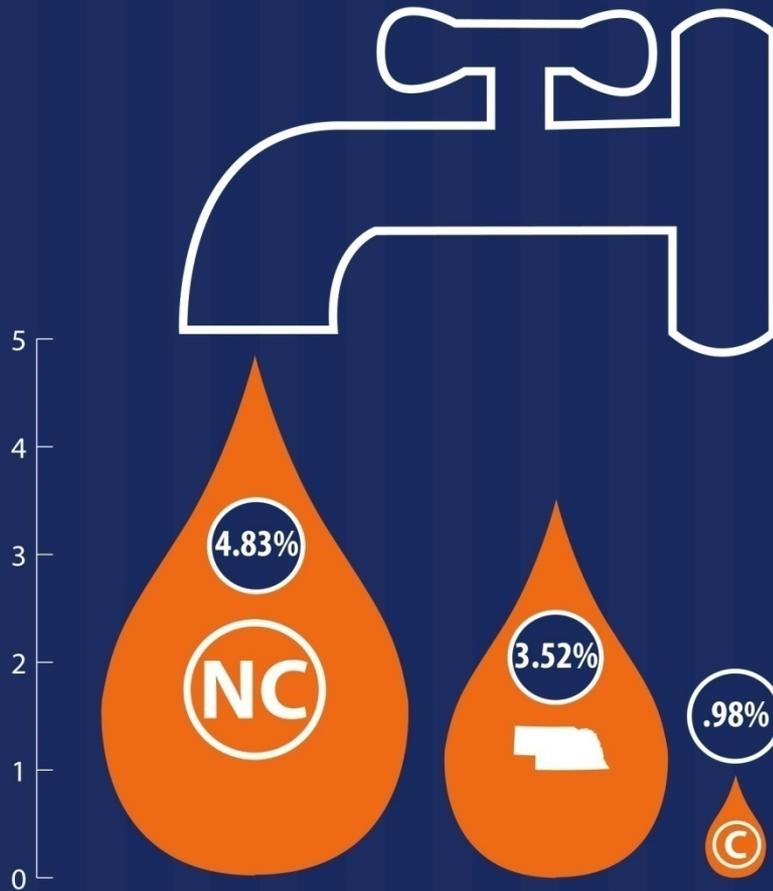




The odds of being classified as a dropout are 7.4 times greater for students not participating in CTE than CTE Participants.

Descriptive Statistics: Dropouts Non-Participants vs. Participants





0.98% of students in grade 12 concentrating in Career Education dropped out of school

Compared to

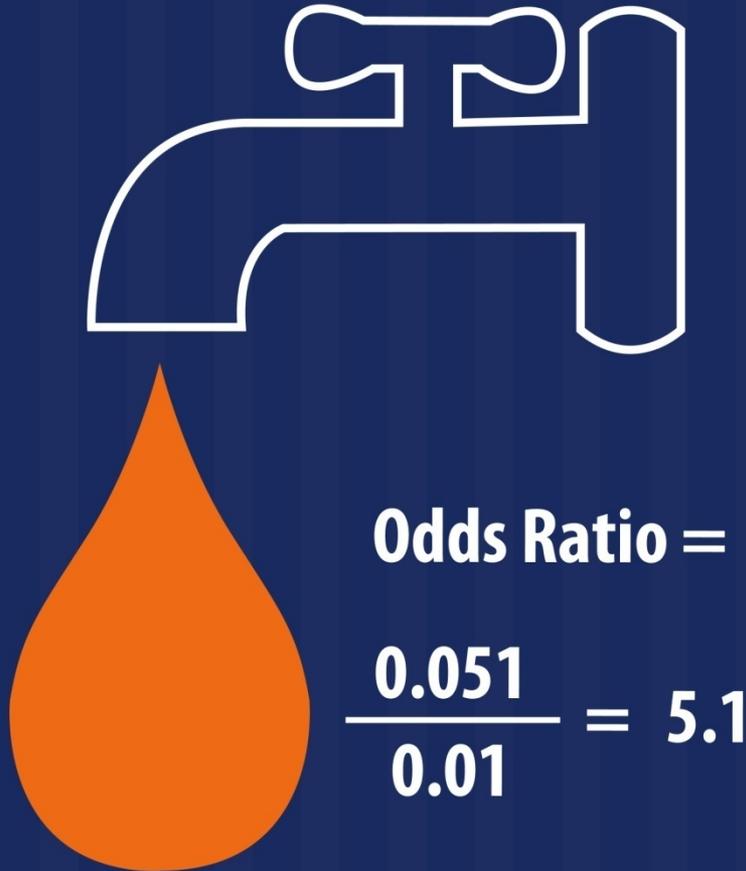
4.83% of students in grade 12 *not* concentrating in Career Education.

Overall, 3.52% of all Nebraska students in grade 12 dropped out of school.

Descriptive Statistics: Dropouts

Non-Concentrators, All Students Grade 12, Concentrators



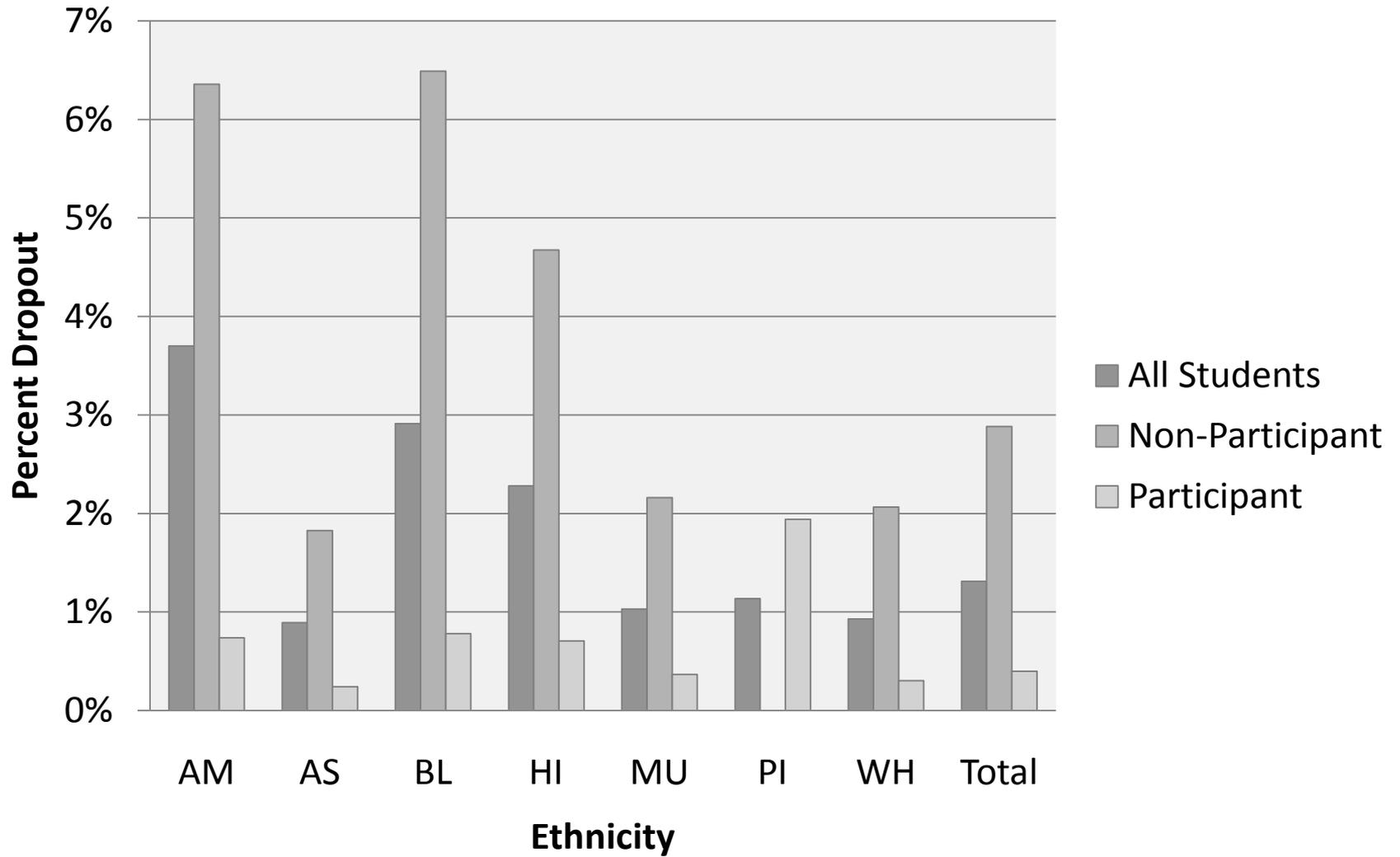


The odds of being classified as a dropout are 5.1 times greater for students not concentrating in CTE than CTE Concentrators.

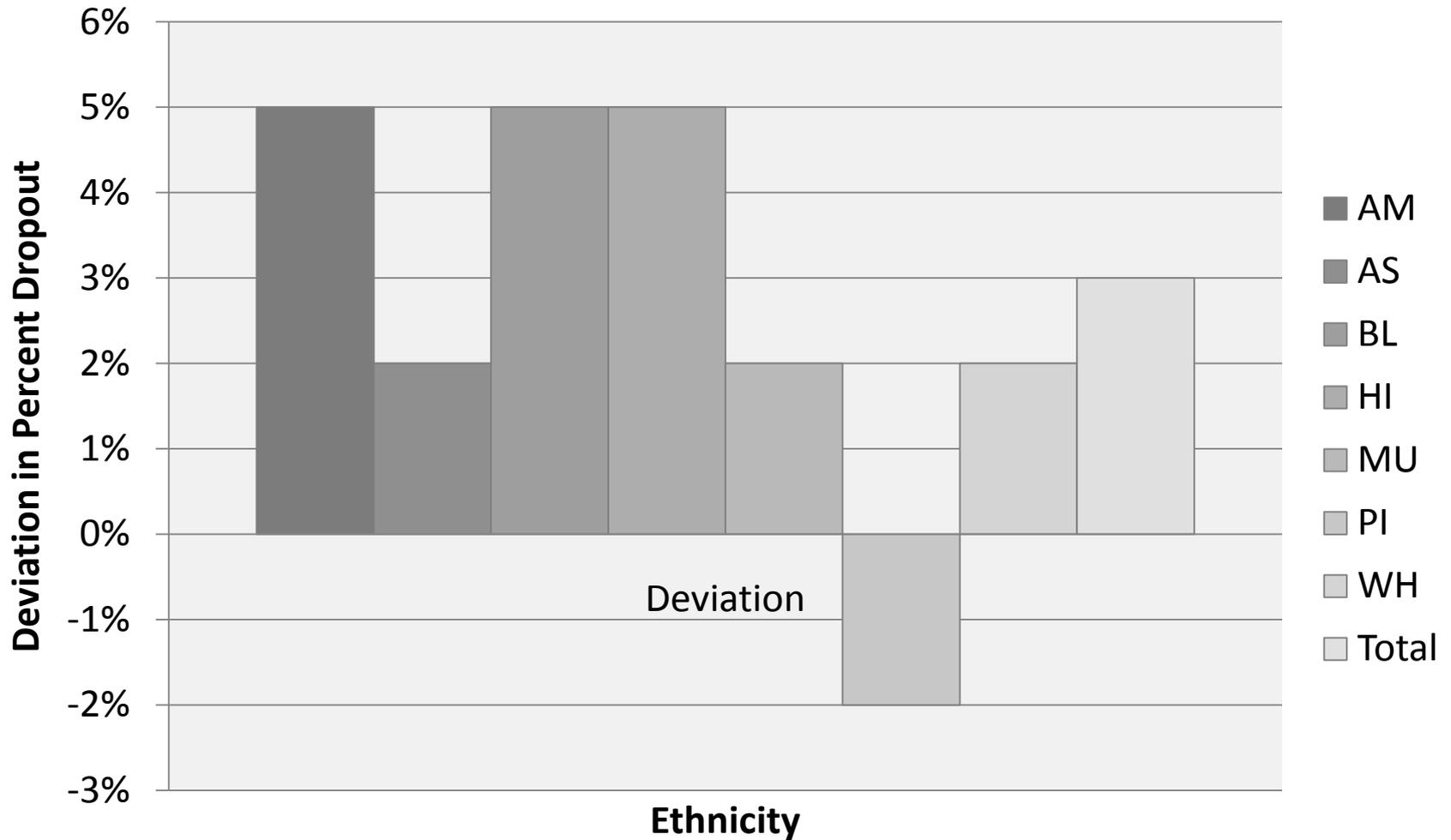
Descriptive Statistics: Dropouts Non-Concentrators vs. Concentrators



Percent Dropout by CTE Participation Status across Ethnicity



Deviation in Percent Dropout by CTE Participation Status across Ethnicity



Inferential Analysis

- Binomial Logistic Regression
 - An extension of the generalized linear model
 - Used to predict a discrete, dichotomous (takes the form of two categories) dependent variable
 - Dropout – Not a Dropout
 - Utilizes the logit link function:
 - $g(x)=\log(x/(1-x))$
 - Parameter estimation produced via maximum likelihood estimation



Inferential Analyses: Dropouts

Predictor	Coefficient	Standard Error	Odds Ratio
CTE Participant (No)	2.002***	0.0589	7.405
Constant	-5.520***	0.0528	0.0002

Note: n = 142,570, LR chi squared = 1541.38***, df = 1, *p < .05. **p < .01. ***p < .001

Predicted Logit (Dropout=1) = $\alpha + \beta_1 \times$ CTE Participant Status

Relative to CTE Participants, the odds of being classified as a dropout are 7.405 times higher for students NOT participating in Career Technical Education.



Predictor	Coef.	SE	OR	Predictor	Coef.	SE	OR
CTE Participant (No)	0.577***	0.0781	1.781	Single Parent	0.517***	0.1478	1.677
Female	-0.330***	0.0635	0.719	Food Program			
Days Membership	0.02***	0.0013	1.02	Free Meals	-0.422***	0.0671	0.656
FTE Percent	0.036***	0.0064	1.036	Reduce Meals	-0.387**	0.1469	0.679
AP or Honors Participant	-0.983***	0.1697	0.374	Ethnicity			
LEP Eligible	0.410***	0.1483	1.507	Asian	-0.465	0.2726	0.628
Gifted Participant	-0.781***	0.2592	0.458	Black	0.231*	0.0992	1.26
Imigrant				Hispanic	0.331***	0.0828	1.393
< 1 Year	0.277	0.2791	1.319	Multiple	-0.203	0.202	0.817
<=1 Year >= 3 Years	0.706**	0.2605	2.027	Pacific Islander	-0.268	0.752	0.767
> 3 Years	0.222	0.1615	1.248	American Indian	0.085	0.1514	1.089
Homeless	0.611***	0.1603	1.843	Grade Level	0.6794***	0.0258	1.973
Days Attendance	-0.049***	0.0015	0.952	Constant	-12.338***	0.7035	4.383

Note: n = 137,478, LR chi squared = 6662.88***, df = 22, *p < .05. **p < .01. ***p < .001



Conclusion

- Career and Technical Education has been identified by the National Dropout Prevention Center as an effective dropout prevention strategy
- Nebraska data reveals substantive differences in dropout across CTE participation status
 - These differences are exaggerated when examined across ethnicities
 - Controlling for programmatic and demographic differences across students, the odds of dropping out of school are greater for students not participating in CTE relative to CTE participants



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