

When Is a Lottery Not a Lottery:

Reflections on Site Selection for a Randomized Controlled Trial Study of CTE Programs of Study

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When Is a Lottery Not a Lottery



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Key Acronyms:

RCT – randomized controlled trial

POS – program(s) of study

Today's Presentation

- Federal policy on determining effectiveness
- Search for RCT sites
- Methodological compromises
- What we learned about lotteries and RCTs in education
- The final sample

Theoretical Framework

- Schooling prepares us to participate in society—including work
- Smith-Hughes Act of 1917
- Emphasis on academics and accountability increasing
- Opportunity to re-integrate CTE and academics

RCT – “The Gold Standard”

- In 2003, Russ Whitehurst reported on the lack of RCTs in education research
- 7 years later:
 - “No effects” is the most common conclusion of What Works Clearinghouse
- In 2007, Jay Rojewski reported on the lack of RCTs in CTE research
 - Stone, Alfeld, & Pearson, 2008

Literature Review

- Some pitfalls of RCTs in education research
 - noncompliance with the random assignment of students (Ong-Dean, Hofstetter, & Strick, 2009)
 - expense of marketing consultants and site grants (Kemple & Rock, 1996)
 - effect of last-minute enrollment on randomization and consent (Bloom & Sommo, 2005)

Research Question

- To what extent does participation in a CTE POS improve student outcomes over:
 1. a strand of control group students, or
 2. a strand with a closely matched comparison group?
- Outcomes = from Perkins IV using systems data (technical skill assessments, NCLB academic measures, etc.)

Method

- Site search
 - state leaders
 - industry organizations
- Two study designs:
 - RCT in District 1
 - Quasi-experiment in District 2

ANCOVA = primary form of analysis

Observations on Site Search

- Why districts hold admissions lotteries
 - To fairly distribute school choice opportunities, which are often oversubscribed
 - To provide a means of integrating schools (e.g., race, SES)

When Is a Lottery Not a Lottery

- Unpopularity of lotteries among schools, parents, students
- Lotteries may not be necessary depending on enrollments
- Districts may not maintain lottery records

Working with the Lottery

- Despite the intended function, lotteries introduce their own biases
 - Bias #1: eligibility criteria
 - Bias #2: district preferences
 - Bias #3: student self-deselection
- Address biases through statistical controls

Final Student Sample - RCT

- District 1 characteristics (2007-2008)
 - over 100,000 students
 - 64% minority students
 - 43% free lunch-eligible
- Three POS high schools (Navajo, Sioux, Apache)

Navajo HS and Control Group

	Navajo	Control
Number of students	~500	~600
	%	
Female	56	68
Non-Latino White	53	36
African American	12	12
Latino	22	35
Other ethnicity	13	17
Free/reduced lunch	21	31
Ltd. English proficient	2	2
Special education	2	3
8th math proficient +	84	87
8th reading proficient +	85	87

Sioux HS and Control Group

	Sioux	Control
Number of students	~500	~800
	%	
Female	56	66
Non-Latino White	29	28
African American	11	11
Latino	51	47
Other ethnicity	10	15
Free/reduced lunch	41	37
Ltd. English proficient	4	3
Special education	5	5
8th math proficient +	73	82
8th reading proficient +	71	82

Apache HS and Control Group

	Apache	Control
Number of students	~300	~500
	%	
Female	38	54
Non-Latino White	40	36
African American	9	12
Latino	21	31
Other ethnicity	30	20
Free/reduced lunch	18	30
Ltd. English proficient	<1	<1
Special education	2	1
8th math proficient +	97	95
8th reading proficient +	94	97

POS Structures at These Schools

- Navajo
 - new specially designed facility, SLCs, project-based, 9th-grade start
- Sioux
 - modernized former career center, upgraded academics, 10/11th-gr. start
- Apache
 - magnet wall-to-wall academies, high tech, 9th-grade start

Final Student Sample - Quasi

- District 2 characteristics (2008-2009)
 - over 75,000 students
 - 66% minority students
 - 49% free lunch-eligible
- Wall-to-wall technology-focused career academy high school

Cherokee HS and Comparison Group

	Cherokee	Comparison
Number of students	~400	~800
	%	
Female	48	50
Non-Latino White	11	11
African American	71	71
Latino	10	11
Other ethnicity	8	8
Free/reduced lunch	68	66
Ltd. English proficient	4	5
Special education	2	2
8th math proficient +	84	80
8th reading proficient +	64	61

Summary/Conclusion

1. Are RCTs really the “gold standard” that education research should strive for?
2. This study was able to include both an RCT strand and also a quasi-experimental strand

Implications and Future Research

- Establishing an RCT in education research is difficult and has limitations
- But RCTs remain the most rigorous way to determine the effects of policy implementation of student outcomes
- Findings from this CTE RCT have the potential to influence the entire CTE enterprise
- 1st-year study data are forthcoming

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For more on this study, including
podcast updates, visit

www.nrccte.org