A Longitudinal Study to Determine the Impact of Inclusion on Student Academic Outcomes

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Purpose

To determine the impact of inclusion on the academic outcomes of students with disabilities

Introduction

- Followed single cohort of students with disabilities in Indiana from 3rd grade (2013) to 8th grade (2018).

- Used data obtained through a data share between IU and IDOE.

Methods

Propensity Score Matching

- Propensity matching was used to reduce the structural biases of the deliberative and intentional LRE placement for special education services process that precludes a random treatment design for investigating the research questions and test hypotheses associated with high and low inclusion.

- The inclusion research literature cites this structural bias in the placement process as an explanation for the dearth of research into the relationship between inclusion and academic outcomes (Rojoewski, Lee, and Greg, 2015)

- This methodology enables a determination of the impact of inclusion upon student state assessments by comparing the outcomes of students included in general education classrooms with students like themselves in separate special education classrooms.

Sample: Treatment and Control Groups

- All third grade students who completed the Indiana State Test of Educational Progress in 2013.

- Excluded students who had a primary disability code of Communication Disorder

- Generated two groups which were approximately homogeneous on variables pertaining to placement

- High Inclusion=General Education classroom for 80% more (Code 50) for the full timespan of the study

- Low Inclusion=General Education classroom for less than 80% time (Codes 51-57) for the full timespan of the study

- Mixed Inclusion= In a General Education classroom for more than 80% time at some point during the period of the study

Matching and Outcome Variables

- Matched on 3rd grade ISTEP+ ELA and Math

- Matched on attendance

- Matched on IRead

- Matched on Primary Disability code

- Outcome variables: ISTEP+ ELA and Math

The Concept of Statistical Twins

High Inclusion

Low/Mixed Inclusion

Statistical Twins

o **IREAD Score = 400**

o **ISTEP ELA = 400**

o **ISTEP MATH = 400**

o **Days Attended = 175**

o **Primary Disability = Mild Cognitive**

o **IREAD Score = 400**

o **ISTEP ELA = 400**

o **ISTEP MATH = 400**

o **Days Attended = 175**

o **Primary Disability = Mild Cognitive**

Significantly Higher

ISTEP ELA/Math Scores

Lower

ISTEP ELA/Math Scores

Data Analysis Sequence

- First analysis compared students who were in High Inclusion with students who were Low Inclusion with High Inclusion as the treatment group

- Second analysis compared students who were High Inclusion with students who were Sometimes Included (Mixed Inclusion) with High Inclusion as the treatment group

- A third and fourth analysis reversed the treatment and control groups with the Low Inclusion being the treatment group

Results

- Students with placements classified as "high inclusion" scored better on ELA and Math for all analyses.

- In all but two of the analyses, the results are significant, meaning that the favorable differences for students included in general education classrooms may be attributed to their general education classroom placement

- 22 of 40 analysis were highly significant

High Inclusion vs. Low Inclusion

			Matched on IREAD, corresponding 2013 ISTEP scores, and PD Codes; Treatment = Low Inclusion	Matched on IREAD, corresponding 2013 ISTEP scores, and PD Codes Treatment = High Inclusion
			All PD Codes	All PD Codes
			ATET	ATET
ELA		2014	-20.46 ***	34.65 *
		2015	-11.11 *	29 *
		2016	-12.51 *	53.21 **
		2017	-24.43 ***	45.38 **
		2018	-17.88 *	29.92
		N	72/144	1693/3386
Math		2014	-23.57 **	37.31 *
		2015	-26.24 ***	16.99
		2016	-23.55 ***	32.5 **
		2017	-25.51 ***	46.28 ***
		2018	-31.7 ***	37.94 **
		N	87/174	1745/3490

High Inclusion vs. Mixed Inclusion

			Matched on IREAD ,corresponding 2013 ISTEP scores, and PD Codes; Treatment = Low Inclusion	Matched on IREAD, corresponding 2013 ISTEP scores, and PD Codes Treatment = High Inclusion
			All PD Codes ATET	All PD Codes ATET
ELA		2014	-8.51 ***	6.19 **
		2015	-7.89 ***	7.94 ***
		2016	-9.32 ***	11.57 ***
		2017	-11.3 ***	11.4 ***
		2018	-22.27 ***	20.89 ***
		N	941/1882	1695/3390
Math		2014	-9.27 **	8.55 **
		2015	-6.59 **	7.96 ***
		2016	-8.85 ***	8.34 ***
		2017	-6.42 **	8.96 ***
		2018	-14.48 ***	19.54 ***
		N	1009/2018	1748/3496

Conclusions and Implications

- There are currently over 340 schools in Indiana who are designated for Targeted or Comprehensive School improvement due to the poor achievement of students with disabilities. As schools and districts make decisions on how best to improve their outcomes for students with disabilities, these findings should inform key decisions in the school improvement process.

- For educators and parents who struggle with making the right decision, this study provides greater certainty that inclusion has a strong relationship to academic achievement for students with disabilities

- This research has implications for teacher pre-service training as well as in-services professional development.

Next Phase

Conduct a study with a similar researching high school and post-secondary outcomes using qualitative and quantitative data. High School data will include an array of outcome measures including diploma type, state assessments, courses taken, i.e., career pathways, etc. Post-secondary outcome data will include school experiences, higher education participation, employment type and wages, etc.