

Registry of Efficacy and Effectiveness Studies

Study Title:

Quantitative Study of Load Reduction Leadership

Registry ID: 22660.1v1

Version History

Changes were published on April 17, 2025 8:19:34 PM EDT

[Review this version.](#)

Description of changes published:

This update includes an announcement regarding the reason for abandoning the study.

Changes were published on February 24, 2025 10:31:41 PM EST

[Review this version.](#)

Description of changes published:

I updated MDES based on updates to comparison group treatments. I forgot to do this for 1v2.

Changes were published on February 24, 2025 5:02:33 PM EST

[Review this version.](#)

Description of changes published:

I updated the comparison selection process, including a second comparison group based on different criteria and distinguishing those groups from all four intervention selection models.

The first version of this entry was published on February 20, 2025 7:18:32 PM EST

Currently viewing this version.

Section I: General Study Information

PI name: Kristopher Bertoglio

PI affiliation: New York City Public Schools

Primary Funding Source(s):

No Funder

Award Number(s):

-

IRB Name:

NYC COE Institutional Review Board

IRB Approval Date:

-

IRB Approval Number:

N/A

Other Registration Name:

-

Other Registration Date:

-

Other Registration Number:

-

Study Start Date:

2025-3-1

Study End Date:

2021-09-01

Intervention Start Date:

2012-08-01

Timing of entry:

Prior to analysis of outcome data

Brief Abstract:

This quasi-experimental study uses historical data and documents to explore relationships between load reduction leadership practices and school improvement. Load reduction leadership refers to a framework that analyzes school leadership behaviors through the lens of how those practices impact teachers' cognitive loads. This study is a more rigorous exploration of load reduction leadership's impact on student performance. It hopes to identify some schools at the boundaries of improvement, stagnation, and decline to examine the relative effect of different load reduction leadership practices.

Keywords:

school leadership, load reduction leadership, cognitive load theory, school improvement

Comments:

This study expands the quantitative components of Bertoglio's dissertation (2024), which found dramatic effects by examining only a few extreme cases.

Also, while this research is not part of my usual work responsibilities, I am an employee of NYC public schools.

Section II starts on the next page.

Section II: Description of Study

Type of Intervention:

Practice

Topic Area of Intervention:

Educational Leadership

Number of intervention arms:

3

Target school level:

3, 4, 5, 6, 7, 8

Target school type:

Urban

Location of Implementation:

United States: United States : Northeast

Further description of location:

NYC

Brief Description of Intervention Arm 1:

Schools that over-performed in both periods, which are potentially schools that consistently implemented LRL-aligned practices

Brief Description of Intervention Arm 2:

Schools that overperformed in the first, but not the second period, which are potentially schools with LRL-aligned practices in the first period but less aligned practices in the second

Brief Description of Intervention Arm 3:

Schools that overperformed in the second, but not the first period, which are potential schools with LRL-aligned practices in the second period but less aligned practices in the first

Brief Description of Comparison Condition:

Schools that consistently did not overperform in both periods.

Comparison condition:

Business-as-usual

Comments:

I will use NYSED data to identify 10 schools with public quality review reports before _and_ after June 2016 that best meet each of the four categories. Their practices will be sampled during each time window, analyzing 80 total QR reports.

If there aren't 10 schools that come close to satisfying each criterion, I may need to reduce the sample size.

Section III: Research Questions

Confirmatory research questions:

Question 1:

How do alignments between school practices and extrapolations from cognitive load theory relate to schools' abilities to improve student proficiency?

Question 2:

What differences exist in the relative distributions of specific load reduction leadership practices between schools selected for each performance pattern?

Question 3:

Do schools need a threshold level of LRL alignment to improve student proficiency consistently?

Exploratory research questions:**Question 1:**

Are these effects consistent between sampled periods and when testing resumed after COVID-19 closures? If so, is this persistence dependent on leadership consistency?

Comments:

-

Section IV-A: Study Design (Selection)**Study Design:**

Quasi-experimental Design with comparison group (QED)

Comments:

If this study's hypothesis linking LRL alignment to school improvement is invalid, it will not be a QED.

Section IV-B: Study Design (Input)***Study Design: Input*****Unit of intervention implementation:**

School

Assignment within sites or blocks:

No

Unit outcome data measured::

School

Intermediate clusters between unit of implementation and unit of measurement:

No

Study Design: Matching Procedures**Covariates used to select comparison:**

School Location, School Type

Distance measure used for matching treatment and comparison:

Exact

Matching method used:

Subclassification

Matching ratio (treatment : comparison):

1:1

Comments:

-

Design Classification

Based on the responses above, this study has been classified as:

QED: 1-level

Section V: Sample Characteristics

Approximate number of schools in the comparison condition: 10

Approximate number of schools in the intervention condition1: 10

Approximate number of schools in the intervention condition2: 10

Approximate number of schools in the intervention condition3: 10

Yes - NYC schools with 3rd through 8th grade test data with QRs between 2013-2016 and between 2016-2019, closely matching each of the 4 profiles. Yes

Comments:

-

Section VI: Outcomes (Input)

Confirmatory question 1: Outcome Measure 1

Outcome domain: School Outcome Domain - LRL alignment %

Minimum detectable effect size: .401

Outcome measure: School level LRL alignment %

Scale of outcome measure: Continuous

Normed or state test: Yes

Same outcome measure in treatment and comparison groups: Yes

Confirmatory question 2: Outcome Measure 1

Outcome domain: School Outcome Domain - LRL alignment %

Minimum detectable effect size: .647

Outcome measure: LRL alignments across case types

Scale of outcome measure: Continuous

Normed or state test: No

Test-retest reliability: N/A

Internal consistency: N/A

Inter-rater reliability: TBD

Same outcome measure in treatment and comparison groups: Yes

Confirmatory question 2: Outcome Measure 2

Outcome domain: School Outcome Domain - LRL alignment %

Minimum detectable effect size: .647

Outcome measure: Frequencies of different LRL practices across case types

Scale of outcome measure: Continuous

Normed or state test: No

Test-retest reliability: N/A

Internal consistency: N/A

Inter-rater reliability: TBD

Same outcome measure in treatment and comparison groups: Yes

Confirmatory question 3: Outcome Measure 1

Outcome domain: School Outcome Domain - LRL alignment %

Minimum detectable effect size: .401

Outcome measure: threshold level of LRL alignment separating consistently improving schools from others.

Scale of outcome measure: Continuous

Normed or state test: No

Test-retest reliability: N/A

Internal consistency: N/A

Inter-rater reliability: TBD

Same outcome measure in treatment and comparison groups: Yes

Section VII: Analysis Plan

Baseline data collected prior to start of intervention:

No

Covariates you plan to include in the model:

Analytic model:

-

Plan to handle cases with missing outcome data:

-

Planned multiple comparisons adjustment, confirmatory question 2 (School Outcome Domain):

No

Comments:

For questions 1 and 3, I'll compare 40 documents from schools during periods of improvement to 40 from schools that were not.

For question 2, I'll compare each LRL category and sub-category across all four case types.

Section VIII: Additional Information

Links:

<https://docs.google.com/document/d/1zKGm6RbHWPnbwGqtnR54ZGr2l99YVHwtW7H8PL0pGM/edit?tab=t.0#heading=h.nelgix8sc8h0>

More detailed descriptions of LRL categories and subcategories that QRs will be coded for

https://docs.google.com/document/d/1r8T6NBuR638Xjy3SrkFTI3WSjwa83__KwrsU5QsOHPQ/edit?tab=t.0#heading=h.idb5vzfxl5k9

condensed version of codebook

Files:

No Files have been added yet.

Comments:

This is my first time using this system & I had to Google many things to complete this form.
