Registry of Efficacy and Effectiveness Studies

Study Title:
Multiple Measures Assessment: Combined Analysis and Long-Term Follow Up of SUNY, Minnesota State, and Wisconsin Programs

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Version History

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Section I: General Study Information

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2021-01-01

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2024-12-31

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2016-01-01

Timing of entry:
Prior to analysis of outcome data

Brief Abstract:
Many colleges use the results of a test, either alone or in conjunction with other information, to refer students either to college-level courses or to non-credit “remedial” courses prior to taking college-level courses (Bailey, Jaggars, & Jenkins, 2015; Rutschow, Cormier, Dukes, & Cruz Zamora, 2019). Those college students who are referred to developmental (remedial) education are substantially less likely to graduate than students who place into college-level courses (Bailey et al., 2015). Large-scale studies indicate that these test scores “misplace” substantial numbers of students — in other words, for many students, the test score does not accurately reflect their ability to succeed in college-level courses (Belfield & Crosta, 2012; Scott Clayton, 2012). As a result, multiple measures assessments (MMAs), that is assessments that use multiple ways of measuring student academic preparation (e.g. high school GPA), are becoming an increasingly popular tool for placing students in coursework with greater nuance.

The Center for the Analysis of Postsecondary Readiness (CAPR), a partnership of the Community College Research Center and MDRC, has completed two random assignment studies of MMA coursework placement. The first study took place in seven community colleges in the State University of New York (SUNY) system and the second study took place across five colleges in Minnesota and Wisconsin. The objective of these studies was to determine whether using MMA placement leads to better student outcomes than test-score only coursework placements.
Across twelve community colleges in New York, Minnesota, and Wisconsin students were randomly assigned to either the status-quo test score coursework placement or MMA coursework placement. For each site and cohort, a full census of students taking coursework placement exams was compiled and prior to testing all students were randomly assigned to be placed using either the status quo test-only placement system (the business-as-usual group) or the alternative MMA placement system (the MMA group). Depending on a combination of each colleges MMA placement rules and each students measures of academic preparation, being placed in the MMA group either lead to no change in the students coursework placement (either staying in developmental coursework or staying in college-level coursework), the student being placed into college-level coursework when they would have been placed in developmental coursework under the test-only placement system (bump-up), or the student being placed into developmental coursework when they would have been place in college-level coursework under a test-only system (bump-down). Only students in the SUNY study were able to have their placement bumped down.

Keywords:
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Comments:
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Section II starts on the next page.

Section II: Description of Study

Type of Intervention:
Policy

Topic Area of Intervention:
Postsecondary and Adult Education

Number of intervention arms:
2

Target school level:
13-16

Target school type:
Suburban, Urban

Location of Implementation:
United States: United States : Midwest, United States : Northeast

Further description of location:
Randomization occurred at seven SUNY colleges, four Minnesota State colleges, and one Wisconsin Technical college.

Brief Description of Intervention Condition:
The MMA determination rules were developed and implemented differently in each of the two studies. In the first study that took place in the SUNY system, placement was made using a predictive algorithm. At each college an algorithm for predicting success in college-level math and English courses was developed using multiple measures of college preparation — including placement test scores, high school GPAs, and other measures. Faculty at each college then created placement rules by choosing cut points on each algorithm that were used to place students into coursework. In the second study of colleges in Minnesota and Wisconsin, MMA placements were made using a combination of traditional coursework placement exams (e.g. ACCUPLACER), high school GPA, non-cognitive assessments (e.g. LASSI and Grit scores), and other test score based exemptions (e.g. SAT, ACT, MCA scores). In each college qualification thresholds were set for each measure and students who met those thresholds on any of the MMA measures was directly placed in college-level coursework.

Brief Description of Comparison Condition:
Placement is based on traditional placement tests and standardized tests.

Comparison condition:
Business-as-usual

Comments:
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Section III: Research Questions

Confirmatory research questions:

Question 1:
What is the average effect of MMA on the academic outcomes of students who get "bumped-up" because of the MMA algorithm?

Exploratory research questions:

Question 1:
What is the average effect of the MMA “bump-up” on the academic outcomes of specific student subgroups?

Question 2:
What is the average effect of the MMA policy overall and how much is the magnitude of this effect drive by the quantity of students the MMA policy moves from taking developmental coursework to college-level coursework?

Question 3:
How much cross-high school variation is there in the MMA “bump-up” and overall MMA policy effects?

Question 4:
What is the average effect of being referred to a college-level course compared with being referred to a developmental level course? Is there evidence that some subpopulations benefit from one referral and other subpopulations benefit from the other? For what subpopulations do we not have causal evidence, and what's our best speculation?

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

Study Design:
Randomized Trial (RT)

Comments:
-

Section IV-B: Study Design (Input)

Study Design: Input

Unit of random assignment of intervention:
Student

Assignment within sites or blocks:
Yes

Define the sites or blocks:
School

Probability of assignment to treatment the same across sites or blocks:
No

Probability of assignment to treatment:
Most colleges chose 50/50 treatment ratio, others 70/30.

Unit outcome data measured:
Student

Intermediate clusters between unit of random assignment and unit of measurement:
No

Comments:
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Design Classification

Based on the responses above, this study has been classified as:
RT: Multisite (Blocked)

Section V: Sample Characteristics

Approximate number of students in the comparision condition within each school: 1400

Approximate number of students in the intervention condition within each school1: 1800

Approximate number of students in the intervention condition within each school2:

Number of schools:

Yes - Students required to go through placement testing. Yes - At most colleges, ESL and dual enrollment students were excluded. No No

Comments:
-

Section VI: Outcomes (Input)

Confirmatory question 1: Outcome Measure 1

Outcome domain: Student Outcome Domain - Completing of first college-level course (C or higher) in the subject the student was bumped up in within nine semesters for both English and Math
Minimum detectable effect size: 0.1
Outcome measure: Completing of first college-level course (C or higher) in English within nine semesters
Scale of outcome measure: Binary
Normed or state test: No
Test-retest reliability: N/A
Internal consistency: N/A
Inter-rater reliability: N/A
Same outcome measure in treatment and comparison groups: Yes

Confirmatory question 1: Outcome Measure 2

Outcome domain: Student Outcome Domain - Completing of first college-level course (C or higher) in the subject the student was bumped up in within nine semesters for both English and Math
Minimum detectable effect size: 0.1

Outcome measure: Completing of first college-level course (C or higher) in math within nine semesters

Scale of outcome measure: Binary

Normed or state test: No

Test-retest reliability: N/A

Internal consistency: N/A

Inter-rater reliability: N/A

Same outcome measure in treatment and comparison groups: Yes

Confirmatory question 1: Outcome Measure 3

Outcome domain: Student Outcome Domain - Completing of first college-level course (C or higher) in the subject the student was bumped up in within nine semesters for both English and Math

Minimum detectable effect size: 0.1

Outcome measure: Cumulative college-level credit accumulation in any subject within nine semesters

Scale of outcome measure: Continuous

Normed or state test: No

Test-retest reliability: N/A

Internal consistency: N/A

Inter-rater reliability: N/A

Same outcome measure in treatment and comparison groups: Yes

Confirmatory question 1: Outcome Measure 4

Outcome domain: Student Outcome Domain - Completing of first college-level course (C or higher) in the subject the student was bumped up in within nine semesters for both English and Math

Minimum detectable effect size: 0.1

Outcome measure: Credential completion and transfer after nine semesters

Scale of outcome measure: Binary

Normed or state test: No

Test-retest reliability: N/A

Internal consistency: N/A

Inter-rater reliability: N/A

Same outcome measure in treatment and comparison groups: Yes

Section VII: Analysis Plan

Baseline data collected prior to start of intervention:

Yes

Description of baseline data:

* placement tests and other multiple measures used for placement
* demographics

Covariates you plan to include in the model:

Analytic model:

-

Plan to handle cases with missing outcome data:

Impute missing outcome data

Process description:
Lack of record of a course or degree completion in the administrative data is treated as failure to complete.

Planned multiple comparisons adjustment, confirmatory question 1 :
No

Comments:
See one-pager or analysis plan attachments for model.

Section VIII: Additional Information

Links:
No links have been added yet.

Files:
File Name: MMA-LTF-Analysis-Plan-OnePager.docx
Description:

File Name: MMA-LTF Combined Analysis Plan.docx
Description:

Comments:
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