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ies INSTITUTE OF EDUCATION SCIENCES

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WWC Review of the Report "Sustained Progress: New Findings About the Effectiveness and Operation of Small Public High Schools of Choice in New York City"[1]

The findings from this review do not reflect the full body of research evidence on small schools of choice.

What is this study about?

The study examined whether winning an admissions lottery to attend a small school of choice (SSC) in New York City improved high school graduation rates, influenced the type of diploma students received, or increased the likelihood of college readiness. An SSC is a small, nonselective public high school emphasizing academic rigor, strong relationships between students and teachers, and community partnerships.

Researchers analyzed data on more than 12,130 students who participated in ninth-grade admissions lotteries for 84 SSCs in New York City (from an initial sample of 14,969 students in lotteries for 84 SSCs). The study included three cohorts of first-time ninth graders who participated in lotteries for SSC admission during the 2004–05, 2005–06, or 2006–07 school years, and each cohort was followed for 4 years.

Study authors measured the effect of enrolling in an SSC by comparing outcomes of students who won an admissions lottery and those who lost the same lottery. Students who participated in a lottery for their first-choice SSC but lost could enter lotteries for SSCs lower down their priority list. But, for the purposes of this WWC review, the WWC focuses on the analysis of students that uses the condition to which they were initially assigned (offered admission or not) during their first lottery as the contrast of interest.[2]

Outcome measures assessed in this impact study included students' 4-year graduation rate, the type of high school diploma received (Local, Regents, or Advanced Regents), and college readiness in English and math, measured using Regents English and Math A scores.[3]

Features of Small Schools of Choice (SSCs)

SSCs are high schools that serve approximately 100 students per grade, predominantly economically and educationally disadvantaged students of color. These schools are "nonselective," meaning that they do not have any entrance requirements (e.g., no examination, interview, portfolio), and emphasize academic rigor, strong relationships between students and teachers, and community partnerships.

SSCs were originally founded in 2002 by planning teams comprised of teachers, administrators, and community partners. Together, they developed the mission and planned the curriculum for each new school.

Utilizing substantial new resources and start-up grants, the SSCs formed partnerships with organizations that have experience starting new schools. The staff at SSCs are primarily focused on academic rigor and personal relationships with students, which is possible given the school's small organizational structure and small student body.

What did the study find?

The study authors found, and the WWC confirmed, that an offer of admission to an SSC increased 4-year graduation rates (in particular, increases in rates of receiving a Regents diploma) and college readiness in English, but had no effect on college readiness in math or other types of high school diplomas that students received.

WWC Rating

The research described in this report meets WWC evidence standards without reservations

The study is a well-executed randomized controlled trial.

Appendix A: Study details

Bloom, H., & Unterman, R. (2013). *Sustained progress: New findings about the effectiveness and operation of small public high schools of choice in New York City.* New York: MDRC.

Setting

The study took place in public high schools in New York City.

Study sample

This study utilizes the natural experiment that occurs in the New York City High School Application Processing System (HSAPS), where, in certain situations of oversubscription to schools, students are randomly assigned to either be offered attendance at a small school of choice (SSC) or to not be offered attendance at the school. There are two components of the HSAPS that together produce an opportunity for a random assignment lottery to be used to compare the outcomes of students offered attendance to an SSC with those of students not offered attendance:

(a) Students rank their preferences for up to 12 high schools.

(b) Each school assigns priority ratings to students, based on geographic proximity and whether the student is "known" to the school (for example, the student contacted or visited the school). This produces prioritization groupings of students for each school; students in higher priority groupings are given priority for enrollment in the school.

The HSAPS randomly determines the order in which it assigns students to high schools, and schools fill their available slots starting with students in the highest priority groupings. As long as the number of available seats is larger than the number of students in the highest remaining priority grouping, then all students in that group are assigned to the school. As the school progressively fills seats and works down to lower priority groups, it may arrive at a point where the next priority group has more students in it than there are remaining seats available at the school. Among students in that priority group, a lottery takes place to randomly determine which students will be offered the available slots. In groupings where *all* or *no* students in a given grouping are offered a slot, no lottery takes place. Students who participate in a lottery but do not win are entered back into the pool for placement in SSCs lower in their preference ranking.

This study focuses on students who participated in an SSC lottery and, in particular, their first SSC lottery. Although these students may win a subsequent lottery, for the purposes of this study, they are considered lottery losers regardless of the outcome of subsequent lotteries.

From an initial population of 22,816 students participating in their first SSC lottery, 14,969 students in 84 schools were included in the baseline sample.[4] The analysis sample included 12,130 students from 84 schools. Students without follow-up data or whose lottery no longer had an intervention or a comparison group after excluding students with missing follow-up data were not included in the analysis sample. Overall, 46% of the sample students were Hispanic, 44% were African American, 5% were White, 3% were Asian, and less than 1% were American Indian. Forty-seven percent of the sample students were male, 84% were eligible for free or reduced-price lunch, 7% were English language learners, and 6% received special education services.[5]

Intervention group

First-time ninth graders who won their first SSC lottery became the intervention group, regardless of whether they actually enrolled in the school. According to the authors, a "small minority" of first-time SSC lottery winners did not enroll in an SSC (pp. 47–48; the authors did not quantify this amount in the report).

Comparison group

First-time ninth graders who lost their first SSC lottery became the comparison group, regardless of whether they won a subsequent lottery for another SSC or enrolled in an SSC. According to the authors, a "small minority" of lottery losers enrolled in an SSC (p. 47; again, the authors did not quantify this amount in the report).

Outcomes and measurement

Eligible outcomes included 4-year high school graduation rates, the type of diploma received (Local, Regents, Advanced Regents), and college readiness in English and math. College readiness was defined as receiving a score of 75 or higher on the Regents English and Math A tests. For a more detailed description of these outcome measures, see Appendix B.

Support for implementation

According to the authors, most SSCs received philanthropic and external programmatic support during start-up.

Reason for review

This study was reviewed by the WWC in response to a request by the Institute of Education Sciences (IES).

Appendix B: Outcome measures for each domain

Completing school	
Graduated from high school	A binary measure indicating whether the student graduated from high school within 4 years and the sum of the three mutually exclusive subcategories, described below.
Local diploma granted	A binary measure indicating whether, upon graduation from high school within 4 years, the student received a local diploma. The local diploma had less rigorous requirements than the New York State Regents diploma and was phased out subsequent to the study period.
New York State Regents diploma granted	A binary measure indicating whether, upon graduation from high school within 4 years, the student received a New York State Regents diploma, the standard diploma granted in New York State.
Advanced Regents diploma granted	A binary measure indicating whether, upon graduation from high school within 4 years, the student received an Advanced Regents diploma, which has more rigorous requirements than the standard New York State Regents diploma.
General literacy achievement	
College readiness in English	A binary measure indicating whether the student obtained a score of 75 or higher on the English Regents exam, the threshold whereby students are exempted from remedial English coursework at the City University of New York (CUNY).
Math achievement	
College readiness in math	A binary measure indicating whether the student obtained a score of 75 or higher on the Math A Regents exam, the threshold whereby students were exempted from remedial math coursework at the CUNY until 2012.

Table Notes: In addition to the 4-year graduation rates, the 5-year graduation rates were also assessed for cohorts 1 and 2 in the analysis of the effect of *attending* an SSC (see the main body of the study report). In the analysis of the effect of attending an SSC, the authors also presented effects on 4-year graduation rates for subgroups defined according to the following characteristics: cohort (1–3); eighth grade proficiency level in reading and math (level 1–4); eligibility for free or reduced-price lunch; race/ethnicity, by gender (Black male, Black female, Hispanic male, Hispanic female, other male, other female); whether the student was "known" to the SSC; the student's ranking of the SSC in his or her enrollment preferences (first, second, or other); and whether the student was eligible for special education or English language learner services. The authors did not present 5-year graduation rates or subgroup effects for the intent-to-treat analysis, which is presented in Appendix B of the study report, and therefore, these results are not included in this WWC report.

Appendix C: Study findings for each domain

Domain and outcome measure	Study sample	Sample size	Mean (standard deviation)		WWC calculations			*p*-value
			Intervention group	Comparison group	Mean difference	Effect size	Improvement index	
Completing school								
Graduated from high school	SSC lottery participants	12,130 students	0.70 (na)	0.64 (na)	0.06	0.16	+7	< 0.001
Domain average for school attendance						**0.16**	**+7**	**Statistically significant**
General literacy achievement								
College readiness in English	SSC lottery participants	12,130 students	0.40 (na)	0.35 (na)	0.04	0.11	+4	< 0.001
Domain average for general literacy achievement						**0.11**	**+4**	**Statistically significant**
Math achievement								
College readiness in math	SSC lottery participants	12,130 students	0.24 (na)	0.25 (na)	0.00	–0.01	0	0.790
Domain average for math achievement						**–0.01**	**0**	**Not statistically significant**

Table Notes: For mean difference, effect size, and improvement index values reported in the table, a positive number favors the intervention group and a negative number favors the comparison group. The effect size is a standardized measure of the effect of an intervention on student outcomes, representing the average change expected for all students who are given the intervention (measured in standard deviations of the outcome measure). The improvement index is an alternate presentation of the effect size, reflecting the change in an average student's percentile rank that can be expected if the student is given the intervention. The statistical significance of the study's domain average was determined by the WWC. na = not applicable.

Study Notes: No corrections for clustering or multiple comparisons and no difference-in-differences adjustments were needed. The *p*-values presented here were reported in the original study. The intervention group means are unadjusted. The comparison group means reported by the author represent the intervention group mean minus the intervention effect based on an Ordinary Least Squares (OLS) regression which controlled for students' SSC lottery and their baseline reading and math scores. The results for specific types of diplomas received by students is presented in Appendix D.

This study is characterized as having a statistically significant positive effect on school attendance and general literacy achievement because the effect in each domain is positive and statistically significant. This study is characterized as having indeterminate effect on math achievement because the effect is neither statistically significant nor substantively important. For more information, please refer to the WWC Standards and Procedures Handbook, version 2.1, page 96.

Appendix D: Supplemental findings by domain

Domain and outcome measure	Study sample	Sample size	Mean (standard deviation)		WWC calculations			*p*-value
			Intervention group	Comparison group	Mean difference	Effect size	Improvement index	
Completing school								
Local diploma granted	SSC lottery participants	12,130 students	0.17 (na)	0.16 (na)	0.02	0.07	+3	0.061
New York State Regents diploma granted	SSC lottery participants	12,130 students	0.45 (na)	0.41 (na)	0.04	0.09	+4	0.002
Advanced Regents diploma granted	SSC lottery participants	12,130 students	0.08 (na)	0.07 (na)	0.01	0.06	+3	0.172

Table Notes: The supplemental findings presented in this table are additional findings that do not factor into the determination of the evidence rating. For mean difference, effect size, and improvement index values reported in the table, a positive number favors the intervention group and a negative number favors the comparison group. The effect size is a standardized measure of the effect of an intervention on student outcomes, representing the average change expected for all students who are given the intervention (measured in standard deviations of the outcome measure). The improvement index is an alternate presentation of the effect size, reflecting the change in an average student's percentile rank that can be expected if the student is given the intervention. na = not applicable.

Study Notes: A correction for multiple comparisons was needed but did not affect whether any of the contrasts were found to be statistically significant. The *p*-values presented here were reported in the original study.

The intervention group means are unadjusted. The comparison group means reported by the author represent the intervention group mean minus the intervention effect based on an Ordinary Least Squares (OLS) regression which controlled for students' SSC lottery and their baseline reading and math scores.

Endnotes

[1] Single study reviews examine evidence published in a study (supplemented, if necessary, by information obtained directly from the author[s]) to assess whether the study design meets WWC evidence standards. The review reports the WWC's assessment of whether the study meets WWC evidence standards and summarizes the study findings following WWC conventions for reporting evidence on effectiveness. This study was reviewed using the single study review protocol, version 2.0. A quick review of this study was released in January 2012, and this report is the follow-up review that replaces that initial assessment.

[2] This single study review reports the results of the intent-to-treat (ITT) analysis of each student's first SSC lottery, found in Appendix B of the study report. This analysis measures the effect of the offer to attend an oversubscribed SSC. The main body of the report presents the effect of actually attending an SSC, rather than receiving an offer to attend an SSC. In studies that report an ITT effect (e.g., the offer of admission) in conjunction with a complier average causal effect (e.g., attendance in an SSC), WWC standards require that the review should be based only on the ITT effect, because fewer assumptions are needed for the ITT estimate to provide an internally valid test of program impact. As a result, the results of the analyses focusing on attending SSCs are not included in this single-study review. All analyses included lottery fixed effects in order to ensure that all intervention–comparison evaluations are based on the experimental within-school evaluations.

[3] There was one outcome included in the study that is not described in this WWC report, as well as additional analyses of the effect of attending an SSC for a number of subgroups. See the table notes in Appendix B for more information. Because the type of diploma outcome is effectively a "subtest" of the broader high school graduation rate outcome, these results are presented in Appendix D.

[4] All students with missing baseline data were excluded from the baseline sample in the authors' analyses. Students who entered the lottery from a private or parochial school were excluded from the sample, regardless of whether they won or lost the lottery, because they could not be tracked following the lottery. In addition to these exclusions based on pre-random assignment characteristics, some full lotteries (including both lottery winners and losers) were excluded from the sample. This occurred (a) when the aforementioned exclusions resulted in no students remaining in either the intervention or comparison group; (b) when the lottery school did not open as planned; or (c) when the percentage of lottery winners and losers enrolling in the SSC was equal. These full lottery exclusions limit the external validity of the study findings but do not compromise the internal validity of the experiment.

[5] The demographic characteristics reported in Appendix B were calculated by the WWC by pooling the prevalence rates reported by condition in the study.

Recommended Citation

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Glossary of Terms

Attrition Attrition occurs when an outcome variable is not available for all participants initially assigned to the intervention and comparison groups. The WWC considers the total attrition rate and the difference in attrition rates across groups within a study.

Clustering adjustment If intervention assignment is made at a cluster level and the analysis is conducted at the student level, the WWC will adjust the statistical significance to account for this mismatch, if necessary.

Confounding factor A confounding factor is a component of a study that is completely aligned with one of the study conditions, making it impossible to separate how much of the observed effect was due to the intervention and how much was due to the factor.

Design The design of a study is the method by which intervention and comparison groups were assigned.

Domain A domain is a group of closely related outcomes.

Effect size The effect size is a measure of the magnitude of an effect. The WWC uses a standardized measure to facilitate comparisons across studies and outcomes.

Eligibility A study is eligible for review if it falls within the scope of the review protocol and uses either an experimental or matched comparison group design.

Equivalence A demonstration that the analysis sample groups are similar on observed characteristics defined in the review area protocol.

Improvement index Along a percentile distribution of students, the improvement index represents the gain or loss of the average student due to the intervention. As the average student starts at the 50th percentile, the measure ranges from –50 to +50.

Multiple comparison adjustment When a study includes multiple outcomes or comparison groups, the WWC will adjust the statistical significance to account for the multiple comparisons, if necessary.

Quasi-experimental design (QED) A quasi-experimental design (QED) is a research design in which subjects are assigned to intervention and comparison groups through a process that is not random.

Randomized controlled trial (RCT) A randomized controlled trial (RCT) is an experiment in which investigators randomly assign eligible participants into intervention and comparison groups.

Single-case design (SCD) A research approach in which an outcome variable is measured repeatedly within and across different conditions that are defined by the presence or absence of an intervention.

Standard deviation The standard deviation of a measure shows how much variation exists across observations in the sample. A low standard deviation indicates that the observations in the sample tend to be very close to the mean; a high standard deviation indicates that the observations in the sample are spread out over a large range of values.

Statistical significance Statistical significance is the probability that the difference between groups is a result of chance rather than a real difference between the groups. The WWC labels a finding statistically significant if the likelihood that the difference is due to chance is less than 5% ($p < 0.05$).

Substantively important A substantively important finding is one that has an effect size of 0.25 or greater, regardless of statistical significance.

Please see the WWC Procedures and Standards Handbook (version 2.1) for additional details.