REVIEW OF *NO EXCUSES CHARTER SCHOOLS*

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Summary of Review

The working paper reviewed here seeks to assess the extent to which "No Excuses" charter schools raise student achievement in English language arts and math and thereby close the achievement gap. The paper defines such schools as having: a) high academic standards, b) strict disciplinary codes, c) extended instructional time, and d) targeted supports for low-performing students. From their meta-analysis of 10 quasi-experimental studies , the authors concluded students who attended No Excuses charter schools had average achievement gains of 0.16 standard deviations in English language arts and 0.25 in mathematics. While conceding that charter schools with lotteries and No Excuses charter schools are not representative of all charter schools, the authors did not address whether or how students who apply to lottery charter schools might not be representative of all charter school students. They also did not address the possible relevance of student attrition for the individual studies' findings and their own analysis. As a result, the claim that No Excuses schools can close the achievement gap substantially overstates their findings. Moreover, the report's relatively small sample of schools concentrated in Northeast Coast cities suggests the current research base is too limited to draw conclusions about the effectiveness of No Excuses charter schools.

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REVIEW OF *NO EXCUSES CHARTER SCHOOLS*

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I. Introduction

On December 8, 2014, the University of Arkansas Department of Education Reform released a working paper titled *No Excuses Charter Schools: A Meta-Analysis of the Experimental Evidence*, by Albert Cheng, Collin Hitt, Brian Kisida & Jonathan N. Mill.[1]

The central goal of the paper is to assess the efficacy of "No Excuses" charter schools in raising student achievement in English language arts and math. No Excuses schools are a relatively new type of charter school based on the educational model proposed by Abigail and Stephan Thernstrom in their book *No Excuses: Closing the Racial Gap in Learning*.[2] The key elements of No Excuses charter schools are: a) high academic standards, b) strict disciplinary codes, c) extended instructional time, and d) targeted supports for low-performing students. The authors conducted a meta-analysis of the findings from 10 studies that used experimental methods to estimate achievement outcomes. All of the findings included in the meta-analyses were drawn from analyses of the achievement effects of charter schools with admissions lotteries. According to the authors, the use of a lottery indicates that a charter school is "oversubscribed" (p. 3). In lottery studies, the study samples consist of lottery applicants. The analyses compare students who are admitted via the lottery with students who are not admitted, based on the assumption that the two groups are similar. In addition, they conducted separate analyses using estimates from a smaller group of studies that focused on "No Excuses" charter schools. No Excuses charter schools are "deliberately regimented" and focused on increasing students' achievement in mathematics and literacy (p. 2). They also tend to be located in urban areas where there are large concentrations of Black and Hispanic students, their target populations. Cheng *et al.* further claim that in some cities No Excuses charter schools "make up a majority of the local charter school sector" (p. 2).

The authors frame No Excuses charter schools and charter schools more generally as a strategy aimed at reducing the achievement gap between White students and their Black and Hispanic peers. The working paper aims to draw conclusions about the effects of attending a No Excuses charter school on student achievement by comparing the achievement outcomes of students that participated in a lottery for admission. The studies included in the analysis compared achievement outcomes of students admitted by lottery (regardless of whether they attended or for how long) with the outcomes of those who were not ("intent-to-treat"); they also compared students admitted by lottery who attended the

charter school with those who were not admitted ("treatment-on-treated"). According to the authors, these studies represent the "best evidence to make inferences about No Excuses charter schools" (p. 3). They do not report disaggregated findings by race/ethnicity.

II. Findings and Conclusions of the Report

The authors identified 10 studies of charter schools that used experimental methods to assess the achievement of students who applied to the schools' lotteries, five of which provided achievement estimates for students attending No Excuses charter schools. All of the effect sizes were reported in standard deviation units. The authors calculated grand effect sizes, or effect sizes for all charter schools included in the studies; effect sizes by school level (elementary, middle, and high, and school level not specified or disaggregated); and grand and school-level effect sizes for the smaller sample of No Excuses charter schools.

Their results indicated that students admitted to charter schools by lotteries had higher achievement in English language arts (ELA) and mathematics than students who were not selected by lotteries. The grand effect sizes ranged from a positive charter school effect of 0.04 standard deviations in ELA to 0.15 standard deviations in mathematics, and all were statistically significant. While there was some variation by grade level and subject, all 16 of the estimates disaggregated by grade level were positive. Eleven were statistically significant and ranged from 0.03 standard deviations (middle school ELA achievement of students selected for the lottery, not statistically significant) to 0.27 standard deviations (high school mathematics achievement of students that attended charter schools, statistically significant). The authors state that these findings are "consistent with the findings from charter school studies" (p. 15).

The estimates for the smaller sample of No Excuses charter schools were higher than the estimates for all charter schools with lotteries. Students admitted to a No Excuses charter school outperformed their peers who were not admitted by lottery by 0.11 standard deviations in ELA and 0.26 standard deviations in mathematics; all of the grand effect sizes were statistically significant. As with the estimates for all charter schools with lotteries, the authors disaggregated the No Excuses schools with lotteries by school level. These estimates were also higher than the estimates for all charter schools with lotteries, ranging from 0.08 standard deviations in mathematics for students who attended schools spanning grade levels (not significant) to 0.34 standard deviations for mathematics (high school students who attended the charter school, statistically significant). All of the estimates were positive, indicating that students who were admitted to or attended a No Excuses charter school outperformed their peers who were not, and 11 of the 16 estimates were statistically significant. The authors claim that these findings "clearly indicate a positive impact of oversubscribed No Excuses charter schools on student math and ELA achievement" (p. 16).

The authors also conducted a sensitivity analysis to assess if their calculations of the grand effect sizes, or the effect sizes for all No Excuses Charter Schools with lotteries, were driven by the findings of a single study. They sequentially removed single studies from the sample and recalculated the grand effect size. According to the authors, the results "do not indicate that our positive findings are driven by any particular outlier in our sample of No Excuses charter studies" (p. 17).

To underscore the relevance of their findings, the working paper observes that the Black-White achievement gap is "typically equated to one standard deviation on standardized test scores" (p. 17). The authors conclude that

> attending a No Excuses charter school for approximately one year increases student achievement by 25 percent and 16 percent of a standard deviation in math and literacy, respectively. These gains are large and significant, and suggest that the impact of attending a No Excuses charter school for four years or more could potentially narrow or eliminate the achievement gap (pp. 17-18).

III. The Report's Rationale for Its Findings and Conclusions

Researchers who wish to isolate the effects of charter school attendance on student achievement have to address the issue of selection bias. Students who elect to attend charter schools may differ from their counterparts who do not attend charter schools in characteristics that are not accounted for, or measured, in the statistical models used to assess charter school students' achievement. The authors attempt to address this problem by restricting their analysis to "experimental" studies of charter schools that admitted students by lottery. In general, studies that use samples of students admitted by lottery assume that: a) schools are oversubscribed, and b) students who are admitted via the lottery are not substantially different from students who were not admitted. "[A]ny differences in academic outcomes between students who receive admission and students who do not can be attributed to attending the charter school as opposed to other factors such as family background" (p. 3).

According to the authors, because these "gold standard" experimental studies have addressed selection bias, they have a high degree of internal validity (p. 3), or they allow causal inferences between the phenomena in question, in this case selection in a charter school lottery and student achievement.[3] The authors use the technique of meta-analysis to generalize across these studies or increase external validity. That is, while well-designed experimental studies allow researchers to make stronger causal claims about particular contexts or populations, it may not be appropriate to generalize beyond these settings, or make similar claims about other contexts or populations. Because most studies of No Excuses charter schools tend to focus on a particular urban area or on schools run by a specific charter school network, the insights from these studies are often limited to those settings. The authors here used meta-analysis to synthesize results across these studies, which they argue allows them to make more robust claims about the achievement

outcomes of No Excuses charter schools across contexts: "The primary strength of meta-analysis is that it combines studies with high internal validity into a larger analysis which improves external validity" (p. 4).

In addition, while a number of the studies specifically focused on No Excuses charter schools, not all of the studies the authors include in their review framed their findings with reference to the No Excuses model. In some instances, the authors determined that the study contained separate estimates for No Excuses charter schools by comparing the authors' descriptions of the schools with the four key characteristics of No Excuses schools: a) "a culture of college-going and high expectations," b) "strong disciplinary and dress codes," c) "a longer school day and/or school year," and d) "targeted instruction for students that fall behind their peers" (p. 8). If a school met all of these criteria, and additional information that Cheng *et al.* gleaned from an Internet search confirmed the their assessment, they coded a school as a No Excuses school even if it was not explicitly described as a No Excuses school in the original study.

IV. The Report's Use of Research Literature

The authors' use of the extensive research literature on charter schools is narrow and largely focused on the smaller set of studies of No Excuses charter schools. They cite three critiques of the No Excuses model as examples of how the model has been controversial, without providing much additional commentary or explanation. More importantly, the report did not address the more substantive critique of the No Excuses model by David Armor that assessments of No Excuses schools' effectiveness do not address the problem of self-selection or selection bias.[4] That is, even if comparisons between groups of lottery students tell us something about achievement within this specific group of students, these results should not be generalized to all charter school students because public school students who apply to lotteries are likely to differ from those who do not. As Armor observed, "these exemplary schools enroll only those students and parents who are motivated to support a more rigorous school program than offered by other public schools in their district."[5] In addition, the authors' assertion that No Excuses charter schools comprise the majority of charter schools in some urban areas appears to be based on a single study.[6]

The authors also did not discuss the possible limitations of lottery-based studies. A relatively small proportion of charter schools that maintain admissions deadlines and waiting lists may be oversubscribed, which would then trigger a lottery.[7] One national study reported that out of 492 charter middle schools operating in 35 states in 2005-06, only 10-15% were likely to be oversubscribed and thus eligible to participate in a lottery-based study. [8] The same study found that a larger group of charter schools that anticipated being oversubscribed were systematically different from schools that were not oversubscribed. The former were more likely to have longer school days and to offer gifted and talented programs; they also had higher median teacher salaries, served lower percentages of limited-English-proficient students and students with individual education

plans, and had a higher percentage of students meeting state proficiency standards than schools that did not anticipate being oversubscribed. When schools are oversubscribed and select students for admission, they may stratify the pool of waitlisted applicants, which means that they are not selecting students randomly from a representative pool of applicants to fill the available seats. For example, they might offer admissions preferences to siblings or students from a host district, or they might select from specific groups of students with the goal of balancing classes or grades. When lottery winners do not accept admissions offers or do not enroll, schools may fill seats at the last minute, which may also compromise random assignment to treatment and control groups.

In addition, the authors do not engage the research on student attrition from KIPP charter schools, one of the more prominent No Excuses charter school networks.[9] While the authors state that one of their key criteria for selecting studies for inclusion in the meta-analysis was that they had to address "non-random attrition in the treatment and control group" (p. 5), they did not do so themselves, failing to explicitly address the possible relevance of attrition for either the studies they selected or for their own analysis. This is important because even in randomly constituted groups, we would expect to find differential rates of attrition from those groups that render all such comparisons suspect.

V. Review of the Report's Methods

Meta-analysis is a statistical method used to combine results across quantitative studies.[10] Each study contributes one or more results calculated as an effect size. An effect size is a measure of the magnitude of the relationship between the variables of interest. In a meta-analysis, all of the effect sizes from a group of studies are standardized or converted to a common scale (when necessary) and then used to calculate a general effect size.[11]

The authors use random-effects meta-analysis to estimate general effect sizes, which is appropriate for this set of studies. In random-effects meta-analysis, the effect sizes from each study are weighted. Effect sizes that are more precise (or have lower standard errors) have a greater influence on the final estimate than studies that are less precise (studies with higher standard errors), but the weighting is also balanced so that studies with larger samples, which tend to have lower standard errors, do not have an excess influence on the general effect size.[12] While the authors note that random-effects meta-analysis is "typically used to calculate effect sizes for studies with heterogeneous populations" (p. 13), a more precise explanation is that random-effects meta-analyses are more appropriate for synthesizing the findings of studies that vary either by participants or in the implementation of an intervention.[13]

The quality of the estimates derived from meta-analytic techniques depends on the quality of the studies that produce the individual estimates that comprise the "data" of meta-analysis. That is, we can only have confidence in the estimates generated from a meta-analysis if the research designs and methods of the individual studies are sound. In this

regard, this report needed to address the extent to which the studies used in its analyses adequately accounted for student attrition, which they did not do.

In this report, 10 studies contributed a total of 18 estimates that were used in different combinations to calculate: a) general effect sizes for all charter schools, b) effect sizes for all charter schools by school level, and c) general effect sizes for the No Excuses charter schools as a group across school levels; and d) effect sizes for No Excuses charter schools by school level. The authors also distinguished between intent-to-treat and treatment-on-treated estimates. Intent-to-treat estimates are used to address two possible problems with randomized experiments. Participants chosen by lottery do not always fully participate in the experiment, *i.e.*, they do not receive the treatment as intended or they drop out of the experiment, so outcome data is not available for all lottery participants.[14] In this instance, outcomes are assessed for all participants that were assigned to the treatment condition— in this case students who were admitted to charter schools—regardless of whether they actually attended the charter school. Treatment-on-treated estimates focus on individuals assigned to the treatment group who actually received the treatment, *i.e.*, lottery winners who attended charter schools. In the original studies the key findings were reported in standard deviation units, so there was no need for the authors to standardize the estimates.

One of the commendable aspects of the report is that it thoroughly documents the number of studies it uses to calculate the effect sizes and the total number of participants across all studies used in the calculations for each effect size. The authors also provide additional documentation for the general effect sizes calculated for all charter schools with lotteries and all No Excuses charter schools as well as for how the individual studies were weighted, allowing readers to easily discern which studies contributed more to the grand effect size calculations.

> *At this stage the evidence base does not meet the goal the authors proposed for their analysis at the outset of the working paper.*

However, the tables also highlight how many of the school-level effect sizes were not derived from a synthesis of studies but were drawn from a single study and are presented as findings from meta-analyses. For example, the largest effect sizes they report for all charter schools with lotteries were for high schools (see column 4 in Table 2, p. 27), but these were drawn from a single study. Ten of the school-level estimates of effect sizes for No Excuses charter schools were also drawn from single studies. The disaggregated findings by school level are potentially significant because students' annual achievement gains on standardized tests vary considerably by grade level; students in the elementary grades make greater gains compared with those in the middle and high school grades.[15] At this stage the evidence base does not meet the goal the authors proposed for their analysis at the outset of the working paper—to improve the external validity of studies of No Excuses charter schools.

VI. Review of the Validity of the Findings and Conclusions

The most robust findings in the working paper are the general effect sizes for all charter schools with lotteries and all No Excuses charter schools with lotteries. While the authors concede that schools with enrollment lotteries are not representative of all public schools, or even all charter schools, by the end of the report they make the strong claim that No Excuses schools may help close the achievement gap between Black and White students, a claim which overstates their findings.

This overly strong claim is also problematic because the studies weighted the most heavily in the analysis of No Excuses charter schools focus on the lotteries for 13 schools in Massachusetts and two in New York City (pp. 35, 38). The working paper points this out, but does not acknowledge that this constitutes a serious limitation on its analysis.

Finally, the authors never address the possibility that students who take part in charter school lotteries may differ from their peers who live in their communities but attend traditional public schools, in which case their conclusion that No Excuses charter schools can help close the achievement gap is also overstated. If these schools also have high attrition rates (or even if they lose students at the same rate as neighboring traditional public schools),[16] then the achievement gains they document may only hold for a specific sub-population of urban students. National studies of charter school achievement suggest that the achievement gains of charter school students compared with matched groups of traditional public school students are substantially lower than the gains documented here, and in most cases the effect sizes are trivial.[17] Moreover, No Excuses schools serve a relatively small number of students[18] and require a substantial amount of funding,[19] which suggests that it might be challenging to implement this reform on a large scale.

VII. Usefulness of the Report for Guidance of Policy and Practice

The authors claim that "[t]his is the first study to develop generalizable conclusions about No Excuses charter schools based upon gold-standard research" (p. 4) which exaggerates the contributions of their analysis. While the authors note the limitations of focusing on this particular group of schools, they do not fully address the possibility that the students these schools attract, either as lottery applicants or as enrollees, might differ from their peers who do not apply to the lotteries. Moreover, the research base on these schools remains limited to Northeast Coast urban areas. As a result, any claim that these schools could close the achievement gap is overstated. While the authors qualify their findings, the existing research does not allow them to make generalizations beyond this small sample of schools. As a result, the working paper offers few insights for policymakers interested in assessing the advantages and disadvantages of the No Excuses model.

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