POLICY BRIEF:

Evaluation of Texas 21st Century Community Learning Centers: A Site-Level Approach by Eishi Adachi, Eric Rolfhus, Don Barfield

SUMMARY

In Texas, 21st CCLC programs have extensive latitude (within general guidelines) to provide different services aligned to the needs of their local schools and their populations. For example, one program may provide afterschool mathematics tutoring, another may emphasize student engagement through sports activities. Each program therefore represents a natural experiment, where program offerings are varied across varied student populations and contexts. This evaluation explored impacts across this large pool of experimental conditions to identify programs where an intensive review of the program's offerings may result in the identification of best-practices to improve academic outcomes.

It is likely that the influence of 21st CCLC programming on student academic outcomes varies across sites, and that sites with particularly effective academically-oriented programming may exhibit higher student academic outcomes, as compared to students participating in social or sports-oriented programming.

Executive Summary

Over the last decade the 21st Century Community Learning Center program (21st CCLC) funded by the U.S. Department of Education has served over 100,000 Texas students annually in after-school centers. Approximately 779 local Texas 21st CCLC programs served students from over 800 schools during the 2012-13, and/or 2013-14 academic years. Statewide evaluations of the impact of 21st CCLCs, which typically show small or mixed academic impacts of the program in aggregate, may serve to obscure the success of specific centers.
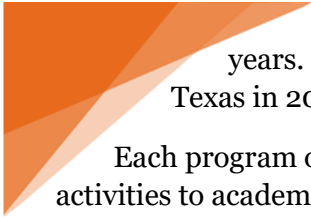
To explore this, Westat examined individual grade-level impacts for the 779 local programs which served students during the 2012-13 and/or 2013-14 academic years. Propensity-score matching was used to create comparison groups of non-21st CCLC students for each grade-level, for each of the centers, for each of three outcomes: *school attendance*, *STAAR Mathematics*, and *STAAR Reading*. The distribution of effect sizes for each STAAR outcome centered on approximately $d = \approx -0.02$ (*no impact*), whereas the median impact for attendance was *small* ($d = 0.14$). These findings are similar to a recent statewide evaluation of Texas 21st CCLC where students were pooled together across all centers.[i] However, in this study, *individual centers* were identified with both large negative and positive impacts. Westat identified several centers with large positive impacts that replicated in both academic years examined. Subsequent interviews completed with some of these centers revealed robust academic tutoring and supports in place.

Results show that a large-scale analytic approach can help identify individual centers that are implementing promising practices that may be worthy of more rigorous evaluation and scaling.

Study Overview
Context and Importance of the Problem

The 21st Century Community Learning Center program (21st CCLC) funded by the U.S. Department of Education has served over 100,000 Texas students in after-school programs annually for the last several years. Approximately 779 local Texas 21st CLC programs served students from over 800 schools during the 2012-13, and/or 2013-14 academic

years. Federal funding for these programs totaled approximately $101.6 million dollars in Texas in 2013.[ii] The programs represent an important component in Texas' education landscape.

Each program offers a locally determined mix of student supports, ranging from sports and arts activities to academically focused tutoring. Annual program evaluations are required, but are typically not focused on causal impacts; over 95% of the local 21st Century CCLC program evaluations had not used a comparison group of non-21st CCLC students to evaluate impacts.

Westat/Edvance was the Texas Education Agency's (TEAs) technical assistance provider for the 21st CLCs during this period. Westat evaluated each of the 779 CLCs individually by conducting a matched-comparison evaluation. Propensity score matching was used to create a control-group for each of the sites using data from the UT ERC. The impact of student participation in a CLC was estimated separately for attendance, and mathematics and reading assessment (STAAR) outcomes. When aggregated across sites, the overall impact statewide was similar to those found in other evaluations.[i] However evaluation of impacts over two consecutive years revealed a number of Texas 21st CCLC programs with positive academic outcomes that repeated suggesting real impacts and not simply single events, observed possibly due to chance.

Meta-analysis of after-school programs have identified either small or inconsistent impacts on student academic outcomes.[iii,iv,v] This has led some[vi] to call for an end to funding of the entire 21st CCLC program by Congress as being ineffective. However, large scale evaluations are designed to estimate *aggregate outcomes* and have ignored likely <u>variability in impacts across</u> specific 21st CCLC centers. **These may represent programs with effective student support models that could be scaled in the future.**

In Texas, 21st CCLC programs have extensive latitude (within general guidelines) to provide different services aligned to the needs of their local schools and their populations. For example one program may provide afterschool mathematics tutoring, another may emphasize student engagement through sports activities. Each program therefore represents a natural experiment, where program offerings are varied across varied student populations and contexts. This evaluation explored impacts across this large pool of experimental conditions to identify programs where an intensive review of the program's offerings may result in the identification of best-practices to improve academic outcomes.

It is likely that the influence of 21st CCLC programming on student academic outcomes varies across sites, and that sites with particularly effective academically-oriented programming may exhibit higher student academic outcomes, as compared to students participating in social or sports-oriented programming.

Statement of Research

The evaluation followed these basic steps:

1. Create student-level propensity scores from 2011-12 academic data and demographic data such as gender, race-ethnicity, English-learner status, special education status, and economically disadvantaged status.
2. Match 21st CCLC students to non-21sct CCLC students based on propensity score.
3. Estimate individual 21st CCLC center impacts (by grade) for school attendance, STAAR Mathematics and STAAR Reading (for study Year 1 – 2012-13).
4. Repeat this analysis (steps 1 and 2) for study Year 2 (2013-14), using prior year data (2012-13) as baseline
5. Examine the distribution of program impacts (Cohen's *d*) for Year 1 and Year 2, and identify centers that repeatedly produced significant positive results.
6. Examine the programmatic offerings of centers identified in #4 to develop hypotheses regarding the cause of the positive impacts.

Key Findings

For brevity this policy brief presents only impacts for the 2012-13 academic year, but these are similar in pattern to those identified in the 2013-14 analyses also conducted.

The distribution of impacts was examined for each of the three outcomes, and summary statistics provided in table 1 below. Note that the N-counts represent the number of grade-level impact estimates summarized. A particular afterschool center may contribute multiple grade-level impacts to this analysis. In many cases an impact for a particular grade may not be counted because it could not be estimated due to small samples, or control students pools inappropriate for proper matching.

Note that only the school attendance impact estimate mean is substantively different from 0 (at d = 0.12). The means for Mathematics (d = -0.01) and Reading (d = -0.03) for all practical purposes represent no impact of 21sct CCLC participation on state assessments. This is entirely consistent with other statewide evaluations which pool all students (REF), and statewide evaluations in other states (REFs).

Table 1. The distribution of all grade-level impacts estimated for the 2012-13 academic year.

Outcome (Grades)	mean	sd	median	N*	min	max	% impacts > 0.25
Attendance (1-12)	0.12	0.34	0.14	1391	-4.53	1.31	33.0
STAAR Math (4-8)	-0.01	0.32	-0.02	535	-1.02	1.00	20.0
STAAR Reading (4-8)	-0.03	0.27	-0.02	535	-1.26	1.29	19.8

A focus on the mean impact, ignores the variability within each outcome. Using the What Works Clearinghouse effect size criteria of 0.25[vii] as representing a finding of substantive importance, approximately 20% of the STAAR outcomes and 33% of attendance outcomes are positive and substantively important. This is clearly demonstrated in the following figures which represent the same data. The vertical red lines represent an effect of 0.25 standard deviations. Impacts to the right of the line represent significant and substantively important findings.

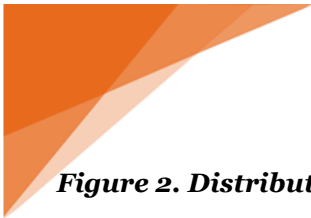**Figure 1. Distribution of grade 1-12 Attendance impacts for the 2012-13 academic year**
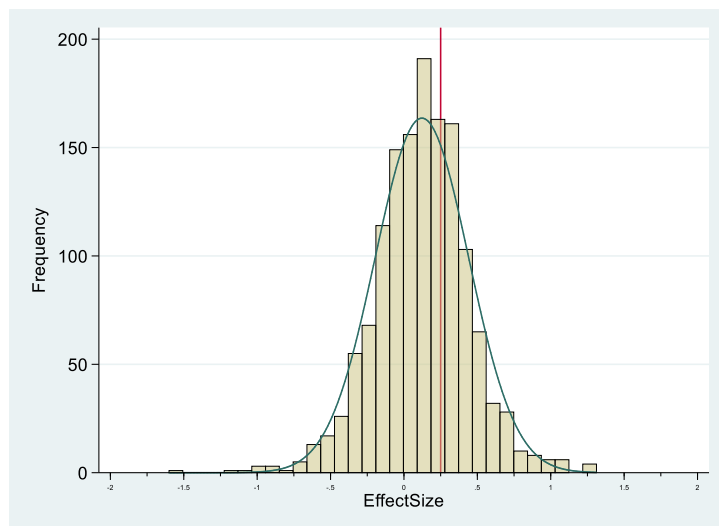
Figure 2. Distribution of grade 4-8 STAAR Mathematics impacts for the 2012-13 academic year
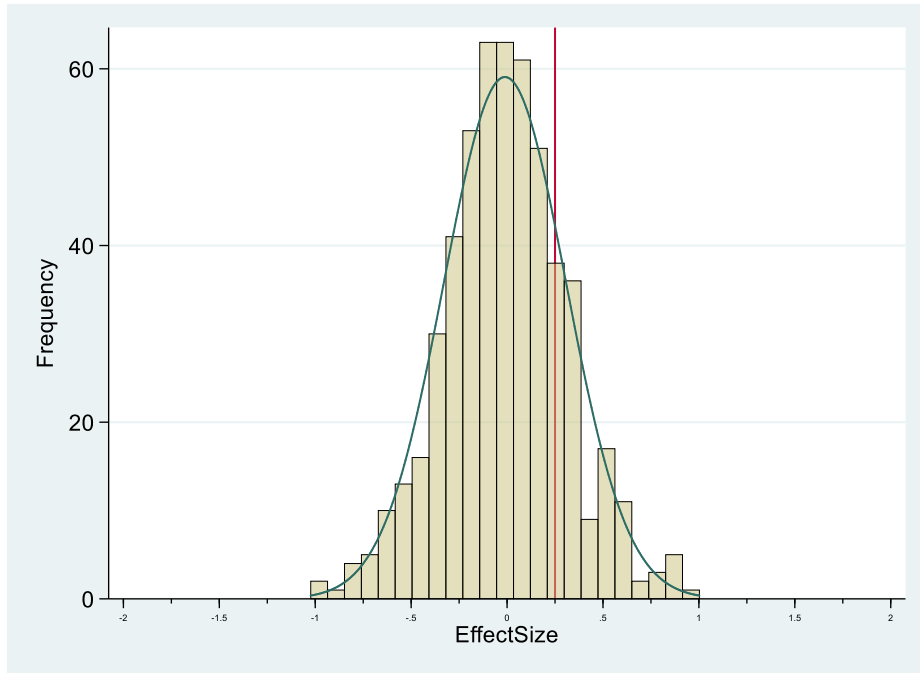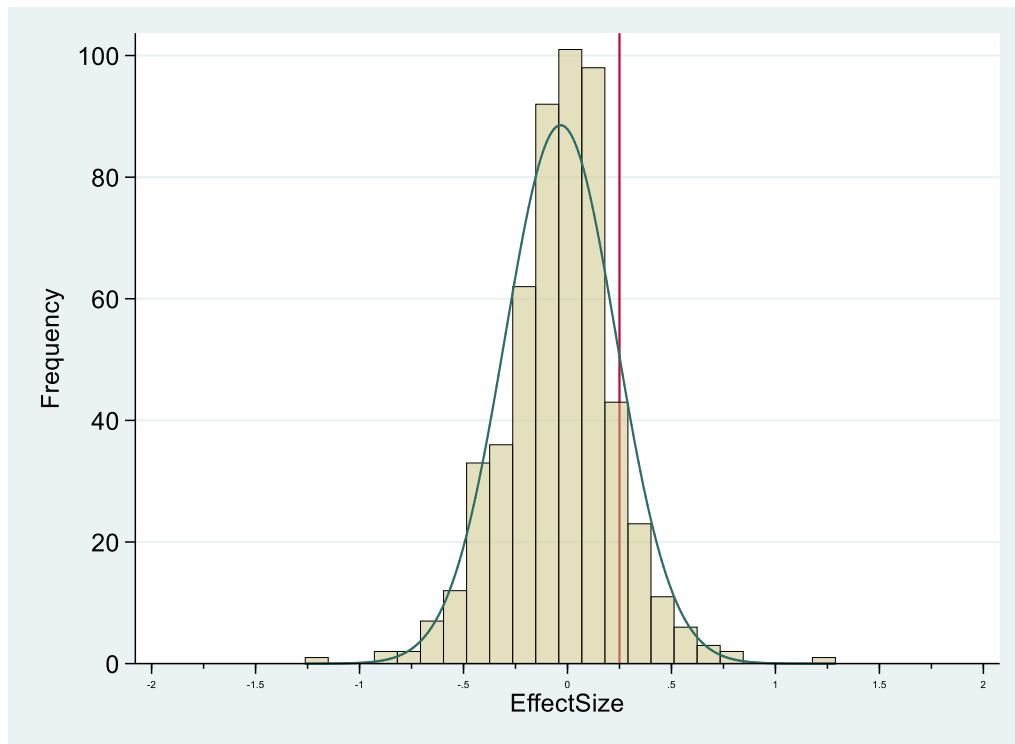

Figure 3. Distribution of grade 4-8 STAAR Reading impacts for the 2012-13 academic year

The evaluation was successful, in that:

- Westat observed a wide distribution of impacts (both positive and negative) for each of the three outcomes (Attendance, STAAR Mathematics, and STAAR Reading). This suggests that state-wide aggregate evaluations are not representative of outcomes at the center level.

- The impacts appear to be normally distributed, and centered near 0. It is possible that the measurement error inherent in estimating quasi-experimental impacts for small grade-level samples could be responsible. However several programs exhibited two consecutive years of positive impacts. This year-to-year replicability suggests real student impacts can be identified.

- The median of the impact distributions are approximately 0 for STAAR outcomes, and positive and small for attendance, similar to aggregate effect sizes identified in other pooled 21st CC evaluations[viii], and the one completed for Texas[ix].

- Westat identified a program with two consecutive years of strong mathematics impacts. Upon investigation, this program had developed a new mathematics booster program aligned with the district curriculum.

- Westat invited the program to a full-day meeting to understand the nature and implementation details of the booster program.

Policy Recommendations

Evaluations of afterschool programs that ignore variability of impacts across centers, and focus on overall average outcomes only, will result in incorrect conclusions about the efficacy of well-executed afterschool programming. As this study has shown, *individual centers can be identified* with repeated annual (i.e. replicable and reliable) large statistically significant impacts.

The quasi-experimental design (QED) used in this study allowed for large-scale screening of centers based on existing administrative data. The approach identified a number of potentially effective centers, whose programmatic offerings could be more closely investigated. However a QED approach cannot control for unobserved variables not captured in administrative databases. To truly demonstrate a causal link between specific programmatic activities, a next step would be to work with promising centers to design random assignment studies to validate their impacts more rigorously, and identify through qualitative means how these particular centers effectively implement their programs. Such lessons would be of great value to after-school programs around the state of Texas as they seek evidence-based programming.

Submitted by:
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References/Endnotes

[i] American Institutes for Research. (February 2013). *Texas 21st Century Community Learning Centers. Year 2 Evaluation Report.* Prepared for the Texas Education Agency. Retrieved from https://tea.texas.gov/WorkArea/DownloadAsset.aspx?id=25769804085

[ii] http://www2.ed.gov/about/overview/budget/statetables/index.html

[iii] Afterschool Alliance. (2015). *A Summary of Formal Evaluations of Afterschool programs' Impact on Academics, Behavior, Safety and Family Life.* Author: Retrieved from http://www.afterschoolalliance.org/documents/Evaluation_Backgrounder.pdf.

[iv] Kirstin Kremer, *et al. (2015).* Effects of After-School Programs With At-Risk Youth on Attendance and Externalizing Behaviors: A Systematic Review and Meta-Analysis. *Journal of Youth and Adolescence,* 44, 616-636.

[v] Durlak, J.A., Weissberg, R.P., & Pachan, M. (2010). A meta-analysis of after-school programs that seek to promote personal social skills in children and adolescents. American Journal of Community Psychology, 45, 294-309.

[vi] Dynarsksi, M. (2015). *The $1.2 billion afterschool program that doesn't work.* Brookings institute: Washington, D.C., https://www.brookings.edu/research/the-1-2-billion-afterschool-program-that-doesnt-work/

[vii] https://ies.ed.gov/ncee/wwc/Docs/referenceresources/wwc_procedures_handbook_v4.pdf, p. 22

[viii] e.g. https://wvde.state.wv.us/research/reports2015/21stCCLCReport2015.pdf

[ix] https://tea.texas.gov/WorkArea/DownloadAsset.aspx?id=25769804085