FY19 End of Grant Evaluation (2019-21)

Jefferson County Board of Education
Program Name: REACH Corps

Evaluation Completed: July 16, 2021

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REACH Corps End of Grant Evaluation

Evaluation Brief

16-July-2021

Description of the Program

REACH Corps aims to reduce disciplinary incidences and increase attendance rates by implementing Check and Connect engagement model strategies. Increased student engagement through targeted interventions to build relationships will promote change in attendance rates and disciplinary incidences.

Goal and Research Questions

1. To what effect does the REACH Corps program improve school attendance for students who participate in the program?
2. To what effect does the REACH Corps program reduce the number of behavior incidences for students who participate in the program?

Approach

This evaluation used a quasi-experimental design, where students are not randomly assigned to treatment and control groups, but rather a matched control group was created post hoc through multivariate matching. Each student in the intervention group was matched with similar students who did not participate in the program. Selection of the comparison group used a two-step process. First, students were matched by grade, school, demographic variables (age, gender, race, free/reduced lunch status, ECE or special education status), and baseline rates of unexcused school absences and behavior referrals. This ensured the comparison group was as similar in background as possible to the treatment group. Not all of the students could be matched on all variables, however, so the remainder of the students were matched solely by grade and baseline rates of school absences and behavior referrals. All students in the comparison group were from schools participating in the REACH Corps program.

Due to the unique challenges introduced by the COVID-19 pandemic, the evaluation team decided to limit the evaluation to the time period occurring before the pandemic began to have a widespread impact on the school district. During the 2019-2020 school year, all schools in the district transitioned to Non-Traditional Instruction (NTI) starting March 16, 2020 and instruction continued in virtual environments through the remainder of the school year. The outcomes targeted by this evaluation (absenteeism and behavior referrals) were fundamentally affected by the transition to NTI. The state department of education released guidance that resulted in behavior incidents being treated differently (e.g. suspensions were no longer a resolution option) and what constituted attendance was also redefined by the state department of education. Given these challenges, this evaluation is based solely on the time period before NTI began. Preintervention control variables and the identification of a comparison group were based on data from SY 18-19, but instead of using data for the full school year, the data were based on the same number of instructional days as were in the Pre-NTI 19-20 school year (130 instructional days).

Data Analysis

Both research questions were addressed using multivariate regression models to determine significant differences between the two groups. This analysis method allows us to control for any differences that may be present from the pre-test measures (behavior referrals and unexcused absences), student demographics, or student grade. To determine if the effect of the program was moderated by grade, a program participation by grade interaction term was also included in the regression model. This had the benefit of testing for a differential effect of the program depending on the grade of the student while also preserving statistical power, and controlling the Type I error rate, by conducting only one analysis per outcome.

Results

Table 1 shows demographic information for both groups. Student demographic variables were similar between intervention and comparison groups and preintervention differences in unexcused absences and behavior referrals were acceptably similar (d = .02, a small difference). This difference in pretest scores is within acceptable limits as defined by the What Works Clearinghouse standards (version 4.1) for quasi-experimental research designs.

Table 1
Demographics

	REACH	Comparison
Variable	M *(SD)*	M *(SD)*
Prior Year Unexcused Absences	13.32 *(6.89)*	13.17 *(6.94)*
Prior Year Behavior Referrals	3.27 *(6.26)*	3.20 *(6.22)*
Intervention Year Unexcused Absences	7.53 *(6.49)*	8.38 *(7.32)*
Intervention Year Behavior Referrals	4.45 *(8.89)*	4.54 *(10.00)*
Race	*N*	*N*
African American	324	293
Asian	2	5
Hispanic	43	44
Two or More	23	24
White	97	123
Other	1	1
Gender		
Male	237	242
Female	253	248
Grade		
Kindergarten	20	20

Variable	REACH M *(SD)*	Comparison M *(SD)*
1	19	19
2	29	28
3	55	56
4	82	82
5	56	56
6	62	63
7	89	89
8	78	77
% F/R Lunch	18%	17%
% ECE	90%	91%

Outcome 1: To what effect d*oes the REACH Corps program improve school attendance for students who participate in the program?*

To understand the effect of the REACH Corps program on unexcused absences, an OLS regression analysis was used. Table 2 shows the final model. The highlighted rows in Table 2 indicate variables of interest, specifically, the variable related to participation in the program and the interaction effect of program participation by student grade. The unhighlighted variables represent variables added to the model to control for factors that may affect the outcome, but are not related to the program itself. As can be seen in Table 2, the REACH Corps membership by grade interaction term was statistically significant. This indicates that the effect of the REACH Corps program on absenteeism varied based on the grade of the participant.

Table 2
Model Parameter Estimates for Model Predicting Unexcused Absences During The Intervention Year

	Unexcused Absences			
Predictors	*Estimate*	*se*	*95% CI*	*p*
Intercept	-2.47	1.12	-4.66 – -0.29	**0.03**
REACH Corps Membership	1.50	0.98	-0.42 – 3.43	0.12
REACH X Grade	-0.49	0.18	-0.83 – -0.14	**0.01**
Grade	0.87	0.14	0.60 – 1.14	**<0.001**
F/R Lunch	0.79	0.66	-0.51 – 2.08	0.24

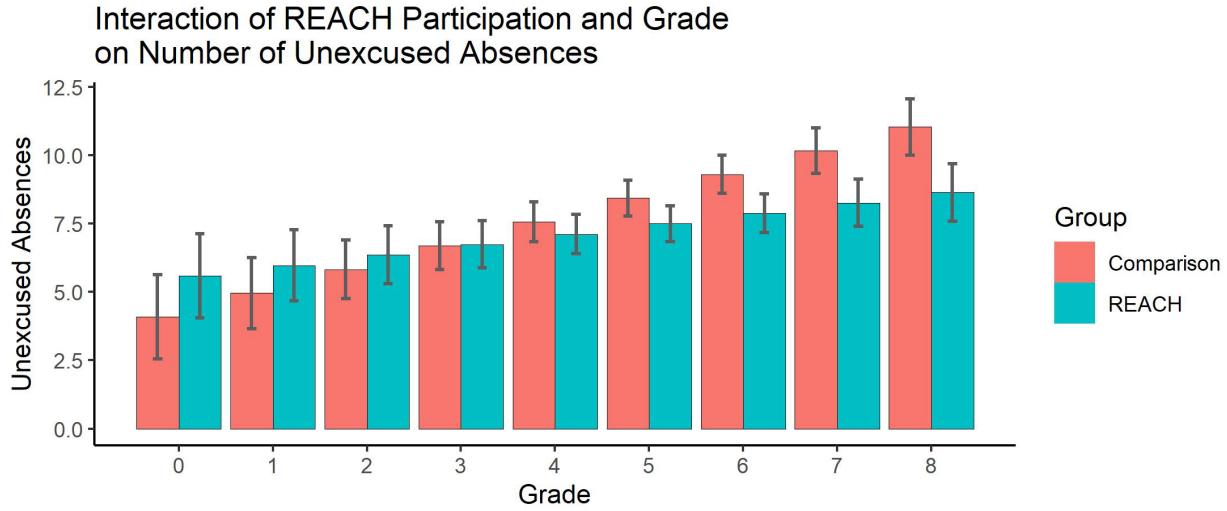
	Unexcused Absences			
Predictors	*Estimate*	*se*	*95% CI*	*p*
ECE	0.57	0.53	-0.47 – 1.61	0.28
Prior Year Behavior Referrals	0.07	0.03	0.00 – 0.13	**0.04**
Prior Year Unexcused Absences	0.42	0.03	0.36 – 0.48	**<0.001**
Sex (Male)	-0.31	0.41	-1.12 – 0.50	0.46
Race (White) [a]	0.34	0.49	-0.62 – 1.30	0.49
Race (Hispanic) [a]	0.32	0.71	-1.07 – 1.71	0.66
Race (Asian) [a]	-3.28	2.34	-7.86 – 1.31	0.16
Race (2+ Races) [a]	0.74	0.92	-1.07 – 2.54	0.42
Race (Other) [a]	3.43	4.28	-4.96 – 11.81	0.42
Random Effects				
σ^2	35.99			
$\tau_{00\ school}$	0.81			
$N_{\ school}$	24			
Observations	980			
Marginal R^2 / Conditional R^2	0.228 / 0.245			

Note. Parameters of interest highlighted
[a] Referent = African American

Because of the statistically significant interaction effect in the model, the easiest way to examine the effect of the program is graphically. Figure 1 shows the effect of the program on current year unexcused absences for each grade. The blue bars represent the predicted unexcused absences, given a particular grade, for the average student who participated in the REACH program. The red bars represent the average student in the matched comparison group. The lines extending above and below the top of each bar represent the 95% confidence intervals. For practical purposes, when the line for one group includes the top of the bar for the other group, there is not a significant difference between the two groups at that level. As can be seen in Figure 1, there was no difference in unexcused absences between the groups for students in 4th grade and below. Starting with 5th grade, however, students in the REACH program had fewer unexcused absences

than the comparison students. This suggests that the REACH program was more effective when working with older students (*d* at grade 8 = 0.18, or 2.39 fewer unexcused absences).

Figure 1



Outcome 2: To what effect does the REACH Corps program reduce the number of behavior incidences for students who participate in the program?

To understand the effect of the REACH Corps program on the number of behavior incidences, a Poisson regression analysis was used. Table 3 shows the final model. The highlighted rows in Table 3 indicate variables of interest, specifically, the variable related to participation in the program and the interaction effect of program participation by student grade. The unhighlighted variables represent variables added to the model to control for factors that may affect the outcome, but are not related to the program itself. As can be seen in Table 3, the REACH Corps membership by grade interaction term was statistically significant. This indicates that the effect of the REACH Corps program on the number of behavior referrals varied based on the grade of the participant.

Table 3
Model Parameter Estimates for Model Predicting the Number of Behavior Referrals During The Intervention Year

	Behavior Referrals			
Predictors	*Count Ratio*	*se*	*95% CI*	*p*
Intercept	0.72	0.12	0.52 – 1.00	0.05
REACH Corps Membership	1.65	0.15	1.39 – 1.97	**<0.001**

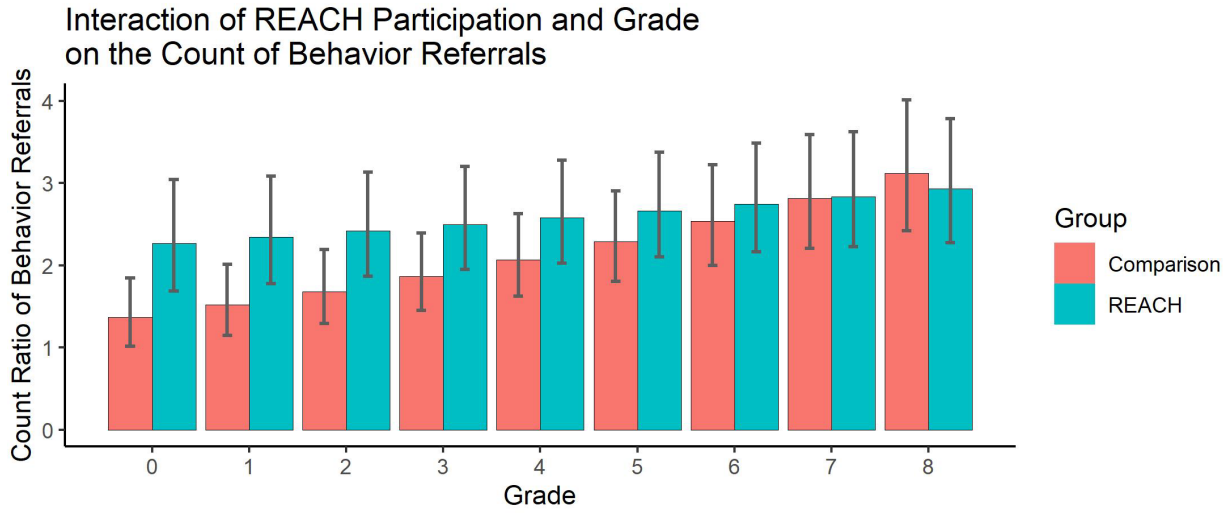
	Behavior Referrals			
Predictors	*Count Ratio*	*se*	*95% CI*	*p*
REACH X Grade	0.93	0.01	0.90 – 0.96	**<0.001**
Grade	1.11	0.02	1.07 – 1.15	**<0.001**
F/R Lunch	1.36	0.09	1.20 – 1.54	**<0.001**
ECE	1.33	0.05	1.24 – 1.42	**<0.001**
Prior Year Behavior Referrals	1.08	0.00	1.07 – 1.08	**<0.001**
Prior Year Unexcused Absences	1.01	0.00	1.01 – 1.02	**<0.001**
Sex (Male)	1.38	0.05	1.29 – 1.48	**<0.001**
Race (White) [a]	0.55	0.03	0.50 – 0.60	**<0.001**
Race (Hispanic) [a]	0.45	0.04	0.38 – 0.53	**<0.001**
Race (Asian) [a]	0.16	0.09	0.05 – 0.50	**<0.001**
Race (2+ Races) [a]	0.57	0.06	0.47 – 0.70	**<0.001**
Race (Other) [a]	0.20	0.14	0.05 – 0.78	**0.02**
Random Effects				
σ^2	0.27			
$\tau_{00\ intervention.schoolID}$	0.33			
$N_{\ intervention.schoolID}$	24			
Observations	980			
Marginal R^2 / Conditional R^2	0.486 / 0.768			

Note. Parameters of interest highlighted
[a] Referent = African American

Because of the statistically significant interaction effect in the model, the easiest way to examine the effect of the program is graphically. Figure 2 shows the effect of the program on current year unexcused absences for each grade. The blue bars represent the count ratio of behavior referrals, given a particular grade, for the average student who participated in the REACH program. The red bars represent the average student in the matched comparison group. The lines extending above and below the top of each bar represent the 95% confidence intervals. For practical

purposes, when the line for one group includes the top of the bar for the other group, there is not a significant difference between the two groups at that level. As can be seen in Figure 2, there was a statistically significant difference in the count ratio of behavior referrals between the groups for students in 3rd grade and below. Starting with 4th grade students, however, the count ratio of behavior referrals for students in the REACH program was not statistically significantly different from the comparison students. This suggests that the REACH program was not effective in reducing the number of behavior referrals.

Figure 2



Recommendations

The REACH program was effective in reducing the number of unexcused absences when working with older students (grades 5-8). However, the program was not effective in reducing the number of unexcused absences for younger students (grades K-4) and did not reduce the number of behavior referrals at any grade. These findings suggest a number of changes/improvements are possible:

1. It may be beneficial for the REACH program to focus primarily on older students.
2. Alternatively, the REACH program may need to adjust the intervention protocol for younger students. This may involve providing training to REACH Corps members who work with younger students that is more specific to their needs.
3. The current analysis can not distinguish program effects from the variations in implementation of the program by individual REACH Corps members. A possible question to be addressed in a process evaluation would be what characteristics successful REACH Corps members share. This information may be useful to identify future members.

4. The process of selecting program schools should be revised. Identifying students for the comparison group was made more difficult for some participating schools due to the limited number of students who met program eligibility requirements. Relatedly, this means these schools would also have difficulty recruiting a sufficient number of eligible students into the program. The results of this evaluation can be used to identify schools with larger populations of in-need students, ensuring REACH Corps members are deployed where they will make the most difference.