Impact Evaluation of EMPOWER: Expanding Magnet Program Options and Widening Education Reach

The Evaluation Group
Dynamic Program Evaluation

EMPOWER

Final Impact Evaluation Report

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Contents

1. ABSTRACT

EMPOWER was an Investing in Innovation (i3) development grant awarded to Cabarrus County Schools by the Office of Innovation and Improvement, U.S. Department of Education. *EMPOWER* provided social-emotional, academic, and non-cognitive supports in magnet school settings to students from low-income families. Family engagement and teacher professional learning on cultural responsiveness were key pillars of the *EMPOWER* program. A dual-language immersion plus rigor model was implemented at treatment elementary schools while a STEM or IB model was implemented at treatment secondary schools. Literacy skills were assessed for the elementary study using the DIBELS standardized assessment. Math achievement was assessed for the secondary study using standardized statewide math test scores. The impact evaluation used a longitudinal quasi-experimental design (QED) to examine the effect of *EMPOWER* on literacy skills and math achievement. Hierarchical linear modeling was run to analyze Outcomes for *EMPOWER* students compared to a matched sample of comparison students with similar baseline scores who participated in business-as-usual, traditional academic instruction. Results showed no statistically significant impact on literacy skills or math achievement.

2. INTRODUCTION

Over the past 20 years the population of Cabarrus County, located in the south-central region of North Carolina, near Charlotte, increased so quickly that Cabarrus County Schools (CCS) was on the US Census Bureau's list of the fastest growing communities in the nation (U.S. Census Bureau, 2016). This population influx had a dramatic impact on CCS, resulting in a new status as one of the largest school districts in North Carolina. This increase in population growth was matched by an increase in diversity across the school district (i.e., over 80 different home languages spoken in CCS).

The changing face of the student population in CCS paralleled that of the US as a whole: since 1968, American public schools saw a 28% decline in enrollment of Caucasian students, a 19% increase in African American students, and an astounding 495% increase in Hispanic students (Orfield, et al., 2014). By 2060, nearly 60% of the US population will be a minority, creating a minority-as-majority population (Wazwaz, 2015). Historically, minority students score lower on academic indicators than more affluent, Caucasian, and Asian counterparts. Morgan, Farkas, Hillemeier, and Maczuga (2016) and Kena, et al., (2015) found these subgroup gaps begin as early as kindergarten and typically persist throughout a student's academic trajectory, negatively impacting their long-term educational attainment, at both the secondary and post-secondary levels. Finding ways to increase educational achievement and attainment for this new, widely diverse minority-as-majority student population of the 21st Century was critically important to our nation's long-term economic security in which 60% of all job openings by 2025 will require some type of post-secondary degree or certification (Lumina Foundation, 2016; Carnevale, Smith, and Strohl, 2014).

Some American school districts are now more segregated than they were in the late 1960's and this segregation occurs across both racial and socioeconomic divides, leading to what the Civil Rights Project termed "double segregation" (Orfield, et al., 2014). Poverty and student racial composition disparities have been confirmed to be the strongest correlates of academic achievement gaps and educational attainment (Borman and Dowling, 2010; Reardon, 2015). When a school's free and reduced-price lunch rate exceeds 50%, it becomes increasingly difficult for schools to retain middle-class families; and at 75%, student academic achievement is significantly impacted for all students (Lacour and Tissington, 2015; Potter, Quick, and Davies, 2016). But for students living in high-poverty, racially isolated neighborhoods, attending low-performing, racially and socioeconomically segregated schools are often their only choice.

Nationally, more than one-third of all black and Hispanic students attend schools that are more than 90% non-Caucasian but more than a third of all Caucasian students in the US attend schools that are at least 90% Caucasian (Potter, Quick, and Davies, 2016). Segregation presents significant barriers, both academically and socially, to students in these schools leaving them ill-equipped to succeed academically or in the ever-increasingly diverse workplace of the 21st Century (Potter, Quick, and Davies, 2016).

Thanks to technological advances, the ways in which people interact, access knowledge, and work, have changed drastically in the last two decades, bringing those of different social, cultural, and racial differences into more intense contact, placing an imperative on schools to more fully prepare students to live and work in an ever increasingly diverse society (Reimers, Turning Students into Global Citizens, 2016). To succeed in the global economy of the 21st Century, students need to develop cultural sensitivity and learn to communicate, live, and work with disparate people, places, and processes (Zhao, 2010). Creating schools with more diverse school populations can assist all student groups in learning how to navigate and succeed in the 21st Century workplace (Wells, Fox, and Cordova-Cobo, 2016). Diverse educational environments have been shown to promote greater academic achievement, and cognitive and social gains in minority and high-poverty students than for their peers attending segregated schools, which include higher test scores and increased post-secondary college enrollment and attainment (Kahlenberg and Potter, 2012; Potter, Quick, and Davies, 2016; Tegeler, Mickelson, and Bottia, 2010).

When schools contain students from multiple racial and socioeconomic groups, it helps prevent lifelong biases as it counters stereotypes, reducing prejudices and decreasing discriminatory attitudes and practices (Kahlenberg and Potter, 2012). Attendance in diverse school environments has been linked to increases in students' cognitive and problem-solving skills and reductions in prejudice including increasing the likelihood of living in integrated neighborhoods and working in integrated workplaces as adults (Mickelson and Bottia, 2010). Creating more diverse school environments will assist CCS' students in developing critical cross-cultural competencies which in turn will make them better prepared to enter the globalized workforce of the 21st Century workplace (Reimers, Turning Students into Global Citizens, 2016).

Relationships with peers (and school personnel) also play an important role in the long-term academic trajectory of these students as they serve as valuable sources of information and provide the support that minority and economically disadvantaged students need to achieve the same levels of academic success and attainment of more resourced students (Gonzalez, 2013). This social capital includes developing memberships and connections to networks of influence which can provide these students with valuable support which promotes and facilitates post-secondary enrollment and employment opportunities (Kahlenberg and Potter, 2012). These benefits accrue for all students, not just minorities or those who are economically disadvantaged (Potter, Quick, and Davies, 2016). Identifying and implementing strategies designed to reduce the differential exposure of students to highly racially and socioeconomically segregated school environments can serve as a catalyst to achieving meaningful gains in academic achievement and educational attainment for all student subgroups in the US.

Research has shown creation of magnet schools to be effective in increasing socioeconomic integration as they attract a diverse group of students and families, ultimately creating a more racially and socioeconomically integrated student body. Therefore, *Expanding Magnet Program Options, Widening Educational Reach*

(*EMPOWER)* built on CCS' prior achievements with K-12 Science, Technology, Engineering, and Mathematics (STEM) pipeline implementation that traditionally serve more advantaged communities and populations, as well as pioneering work with Multi-Tiered System of Supports to address prevalent student academic, behavior, and counseling needs. Specifically, a dual-language immersion plus rigor model was implemented at *EMPOWER* elementary schools while a STEM or IB model was implemented at *EMPOWER* secondary schools. Literacy skills were assessed for the elementary study using the DIBELS standardized assessment. Math achievement was assessed for the secondary study using standardized statewide math test scores.

2.1   Program Description

CCS' i3 development project, *EMPOWER*, was supported by strong theory, evidenced through research, and illustrated by the *EMPOWER* logic model, depicted in Figure 1. *EMPOWER* was funded for five years with one additional year of a no cost extension. The theory stated that establishing a continuum of high-quality K-12 magnet programs intentionally placed in high-need areas, combined with the layering of innovative non-cognitive, socio-emotional, and academic supports and services, would increase academic achievement and educational attainment outcomes while decreasing the racial, ethnic, and socioeconomic isolation of students attending the lowest-performing schools. Through *EMPOWER*, CCS transformed its lowest-performing, mostly minority, high-poverty schools into magnet schools to ensure equity of curricula and instructional access to low-income and minority-as-majority students by instituting a districtwide policy. Over the course of *EMPOWER* six elementary schools and six secondary schools (five middle and one high school) were transformed. *EMPOWER* implemented a two-pronged approach: 1) intentionally placing magnet programs in all schools with a greater than 50% free and reduced-price lunch rate; and 2) implementing dual language immersion magnet programs in any school with a greater than a 25% English learner (EL) Hispanic population.

Figure 1. The *EMPOWER* Program Model

CONSTRUCTS AND INDICATORS	SHORT-TERM OUTCOMES	INTERMEDIATE OUTCOMES	LONG-TERM IMPACT
Construct 1: REVISE POLICIES TO PROMOTE DIVERSE PARTICIPATION IN MAGNET SCHOOL PROGRAMS AND PIPELINE PERSISTENCE 1. #, % of *EMPOWER* Advisory Council meetings focused on MS policy reviews/revisions 2. #, % of identified barriers addressed by CCS 3. # of hub stops provided for families outside MS school attendance zones	*EMPOWER* creates more diverse learning communities to provide equity of curriculum and instructional access for under-resourced students. • # of MS applications from families outside attendance zones • % of neighborhood students persisting in a MS pipeline (by subgroups)	**ENHANCED EDUCATIONAL ENVIRONMENT AND STUDENT ENGAGEMENT IN MS PIPELINE PROGRAMS** #, % of schools implementing magnet programs with fidelity % of staff that believe that all groups can reach proficiency in core subject areas #, % of schools that reduce ODRs (by subgroups) % of schools that increase daily student attendance rate (by subgroups) #, % of schools implementing family community engagement strategies with fidelity % of students who report intention to enroll in Honors and AP courses (by subgroups)	**IMPROVED STUDENT ACHIEVEMENT FOR UNDER-RESOURCED STUDENTS** Significant improvement in standardized achievement scores in Reading and Math as evidenced in QED impact evaluations Increased enrollment and passing rates for neighborhood students in Honors and AP courses (by subgroups)
Construct 2: PROVIDE HIGH QUALITY TEACHER PROFESSIONAL LEARNING TO INCREASE RIGOROUS AND CULTURALLY RESPONSIVE INSTRUCTION 1. #, % of *EMPOWER* Implementation Teams attending the Summer Professional Learning Institute 2. #, % *EMPOWER* Culturally Responsive Teaching (CRT) trainings provided 3. #, % MS teachers completing three CRT trainings per year 4. #, % of MS teacher completing program-specific PD	*EMPOWER* increases teacher competence in delivering rigorous and culturally relevant instruction aligned with the NC Standards, so that all students, particularly under-resourced students, feel connected and supported. • % of staff that report using CRT strategies to support rigorous instruction • % of staff that report self-efficacy with CRT strategies to support rigorous instruction • % of staff that report support within their schools to implement new CRT strategies • % of students who report a sense of belonging (by subgroup)		
Construct 3: PROVIDE STUDENTS COMPREHENSIVE WRAP-AROUND SUPPORTS 1. # of schools implementing a non-cognitive curriculum 2. #, % of targeted students with individualized student plans developed with School *EMPOWER*ment Counselors	*EMPOWER* creates a climate in which all students, particularly under-resourced students, are *EMPOWER*ed with supports and strategies to succeed in diverse rigorous MS programs and in life. • % of students who report increases in non-cognitive factors • % of students who report positive SEC-student interactions		
Construct 4: ENGAGE FAMILIES IN ACADEMIC CHOICES 1. # of Family Outreach Committee meetings 2. # of outreach communications to families 3. #, % of schools hosting parent outreach events 4. #, % of schools hosting an Open House 5. # of districtwide School Choice Fairs	*EMPOWER* provides resources for families, particularly from under-resourced communities, to make informed education decisions. • #, % of families that participate in parent events (when possible, disaggregated by subgroup) • #, % of neighborhood families that participate in the annual School Choice Fair		

Assumption: The school district has placed magnet programs, that will deliver rigorous and culturally relevant instruction, in high-need schools.

EMPOWER was guided by four overarching goals: 1) revise policies to promote diverse participation in magnet school programs and pipeline persistence; 2) provide high-quality professional learning to increase rigorous and culturally responsive instruction; 3) provide students comprehensive wrap-around supports; and 4) engage families in academic choices early and throughout their child's academic career. The four key strategies or goals of *EMPOWER* and key implementation under each strategy are outlined in Table 1.

Table 1. *EMPOWER* Strategies for Implementation	
Key Strategies	**Implementation**
Revised policies to promote diverse participation in magnet school programs and expansion and pipeline persistence	• Expanded schools offering academically rigorous magnet programs (STEM, Spanish dual language immersion, IB, and A+ Fine Arts) to keep pace with the demand for school choice options. • Modified requirements for magnet school pathways. • Decreased the racial, ethnic, and socioeconomic isolation of students attending *EMPOWER* schools. • Pipeline began at elementary schools (Title I, diverse students) so every student in the school's attendance zone was reached. • Transportation was provided to high-need students outside the school attendance zone. • School Choice Institute served as a local and national resource of school choice programs.
Provided high-quality professional learning (PL) to increase rigorous and culturally responsive instruction	• Increased academic rigor and relevance for students by providing magnet school teachers with comprehensive professional learning opportunities with an option to obtain a Problem-Based Learning Instruction certification, and an annual three-day summer Professional Learning Institute. • Extensions existed beyond the classroom to support student engagement and achievement; PBL content was layered with personalized instruction.
Provided students comprehensive wrap-around supports	• Delivered a non-cognitive curriculum pre-assessment to all magnet school students to boost non-cognitive factors such as empathy, problem-solving, communication, and cooperative relationships with others. • *EMPOWER* counselors provided supports to identified high-need magnet school students.

Table 1. *EMPOWER* Strategies for Implementation	
Key Strategies	**Implementation**
Engaged families in academic choices early and throughout their child's academic career	• Family Outreach Committees existed to build staff capacity in family engagement strategies. • Family outreach liaisons increased families' awareness of schooling options by inviting families to participate in workshops and events including annual open houses and school choice fairs.

2.2 Program Fidelity of Implementation

A fidelity of implementation study tracked data on key indicators, such as culturally responsive teaching trainings and parent outreach events, to determine whether *EMPOWER* was implemented with fidelity (see Appendix A). *EMPOWER* met the pre-determined threshold for adequate program implementation in the first year of programming. However, the *EMPOWER* program ran into significant implementation barriers in the following years, such as school closures due to the COVID-19 pandemic and high program staff turnover. Therefore, *EMPOWER* was not implemented with fidelity outside of the first year. Results for the fidelity of implementation study are included in Appendix B.

3. IMPACT STUDY DESIGN

The *EMPOWER* i3 impact study used a longitudinal quasi-experimental design (QED) to examine the effect of *EMPOWER* on literacy skills and math achievement. Outcomes for *EMPOWER* students were compared to a matched sample of within-district comparison (business-as-usual) students who did not have access to the components of *EMPOWER*. Comparison group students received traditional academic instruction in the school environment. Hierarchical linear modeling (HLM) was used to analyze all *EMPOWER* impact data.

3.1 Samples

For the literacy skills study, two kindergarten cohorts, enrolled in six elementary Cabarrus County Schools, participated in the evaluation of *EMPOWER*. The treatment schools were selected due to their unique need as Title I status schools with the highest minority enrollments in the district. All *EMPOWER* students in the treatment schools received all components of the *EMPOWER* intervention in kindergarten and 1st grade.

Comparison schools within the district were selected because they implemented a business-as-usual curriculum and served similar populations of students.

For the math achievement study, two cohorts of Grade 6 students, enrolled in five Cabarrus County Schools, participated in the evaluation of *EMPOWER*. The treatment group consisted of Grade 6 students entering *EMPOWER*, STEM, or IB programs in five middle schools. The treatment schools served district schools with the highest minority enrollments. Low-income minority students were zoned for each school, making their enrollment compulsory and largely due to circumstance rather than choice. *EMPOWER* students in the treatment schools received all components of the *EMPOWER* intervention in Grades 6-8.

3.2 Study Questions and Assessment Information

Literacy skills at baseline and outcome time points were assessed using the sixth edition DIBELS Next (Dynamic Indicators of Basic Early Literacy Skills) assessment. The DIBELS Next assessment has strong inter-rater and test-retest reliability as well as evidence of content, criterion-related, and discriminant validity (Good et al., 2013). DIBLES Next is implemented all over the country as a standardized measurement and was not developed in association with *EMPOWER* so there is not over-alignment of the DIBLES Next assessment with the *EMPOWER* program.

Math achievement at baseline and outcome time points was assessed using the North Carolina End-of-Grades math assessment. The NC EOG assessments have strong inter-rater and test-retest reliability as well as internal consistency and construct validity. Teams of experts develop and test questions for the NC EOG assessments to ensure the assessments are reliable and valid. NC EOG assessments are implemented across North Carolina as a standardized measurement and is not over-aligned with the *EMPOWER* program.

1. What was the effect of *EMPOWER*'s dual-language immersion plus rigor model on literacy skills of *EMPOWER* students, compared to business-as-usual comparison students, after one program year?2. What was the effect of *EMPOWER*'s dual-language immersion plus rigor model on literacy skills of *EMPOWER* students, compared to business-as-usual comparison students, after two program years?

3. What was the effect of *EMPOWER*'s STEM or IB secondary model on math achievement of *EMPOWER* students, compared to business-as-usual comparison students, after one program year?

4. What was the effect of *EMPOWER*'s STEM or IB secondary model on math achievement of *EMPOWER* students, compared to business-as-usual comparison students, after two program years?

4.   ANALYSIS AND RESULTS

4.1   Baseline Equivalence

Baseline Analytic Model

$$Y_i = \alpha + \beta_1 T_i + \varepsilon_i$$

Where:

Y_i = the baseline measurement for student i

α = intercept

$T_i\beta_1$ = impact of the *EMPOWER* condition (1 = treatment and 0 = comparison)

ε_i = random error term for student i

Baseline Analytic Model Specifics. Baseline equivalence is considered to meet What Works Clearinghouse standards if the absolute value of the effect size difference at baseline is less than 0.05. If the absolute value of the effect size at baseline is over 0.05 but less than or equal to 0.25 then baseline equivalence is satisfied if the analytic model includes a statistical adjustment for baseline testing. All models include the baseline scores as covariates to statistically adjust for baseline scoring

Baseline testing indicated baseline equivalence was met for the elementary literacy skill studies. Therefore, baseline equivalence standards were met for research questions one and two regarding literacy skills in elementary schools.

Initial baseline testing indicated the treatment group was not equivalent to the comparison group on baseline math achievement test scores for both the one and two year secondary school math analyses. To create groups equivalent at baseline, a subset of 300 treatment and 300 comparison students were randomly selected from the original secondary math analytic samples. Using the sample function in R, 300 treatment students were randomly selected to be included in the final analytic sample. 300 statistically matched comparison students were then selected to serve as the final comparison analytic sample for the secondary math analyses. The final math samples were reassessed for baseline equivalency. Baseline equivalence of the treatment and comparison samples was tested on baseline test scores for all four analyses. Hedge's *g* was calculated for each research question. Results for all impact study samples are included in Table 2. In all

cases, the standardized mean difference (effect size) between treatment and comparison on baseline measures was less than 0.25, indicating that the two groups were equivalent at baseline after statistically adjusting for baseline scores.

Research Question	EMPOWER Mean	EMPOWER N	EMPOWER Standard Deviation	Comparison Mean	Comparison N	Comparison Standard Deviation	Effect Size
Table 2. Characteristics of Treatment and Comparison Samples at Baseline							
1. One-Year Literacy	30.86	668	24.08	30.65	668	23.58	-0.01
2. Two-Year Literacy	26.26	191	20.28	27.07	191	20.28	0.04
3. One-Year Math	449.31	300	9.71	449.63	300	9.73	0.03
4. Two-Year Math	448.32	300	10.52	449.09	300	9.86	0.08

4.2 Confirmatory Analytic Model

$$y_{ij} = \alpha + \beta_1 T_{ij} + \beta_2 Pretest_{ij} + \beta_3 Minority_{ij} + \beta_4 EnglishLearner_{ij} + \beta_5 Cohort_{ij} + \mu_j + \varepsilon_{ij}$$

Where:

Y_{ij} = the outcome for student i in school j

α = intercept

$\beta_1 T_{ij}$ = treatment effect, (*EMPOWER* = 1, comparison = 0)

$\beta_2 Pretest_{ij}$ = parameter estimate for the effect of the baseline test score

$\beta_3 Minority_{ij}$ = effect of student racial minority status (1 = racial minority and 0 = not a racial minority)

$\beta_4 EnglishLearner_{ij}$ = effect of student English learner status (1 = English Learner and 0 = not an English Learner)

$\beta_5 Cohort_{ij}$ = effect of student Cohort (0 = Cohort 1 and 1 = Cohort 2)

μ_j = error term for school j

ε_{ij} = error term for student i in school j

* Please note that the Cohort term is only included in one year impact models.

4.3 Results for Confirmatory Question 1: Literacy Skills After One Program Year

Results indicated no statistically significant difference between the *EMPOWER* students and the business-as-usual comparison students on literacy skills at the end of one program year. Higher pre-intervention literacy skills significantly predicted higher post-intervention literacy skills. Table 3 presents the hierarchical linear model output.

Table 3. *EMPOWER* Literacy Skills One-Year Model				
Variable	**Estimate**	**Standard Error**	***t*-value**	***p*-value**
Intercept	114.81	3.44	33.33	< 0.001
Baseline literacy skill score	1.12	0.04	25.95	< 0.001
Treatment	4.91	4.49	1.09	0.316
Minority	-1.27	-1.27	-0.59	0.555
English Learner	-0.49	-0.49	-0.13	0.894
Cohort	0.23	0.23	0.11	0.916

4.5 Results for Confirmatory Question 2: Literacy Skills After Two Program Years

Results indicated no statistically significant difference between the *EMPOWER* students and the business-as-usual comparison students on literacy skills at the end of two program years. Higher pre-intervention literacy skills significantly predicted higher post-intervention literacy skills. Table 4 presents the hierarchical linear model output.

Table 4. *EMPOWER* Literacy Skills Two-Year Model				
Variable	**Estimate**	**Standard Error**	***t*-value**	***p*-value**
Intercept	112.34	11.33	9.92	< 0.001
Baseline literacy skill score	2.34	0.18	12.65	< 0.001
Treatment	-8.48	16.33	-0.52	0.626
Minority	-4.40	8.14	-0.54	0.589
English Learner	-4.00	11.97	-0.33	0.739

4.6 Results for Confirmatory Question 3: Math Achievement After One Program Year

Results indicated no statistically significant difference between the *EMPOWER* students and the business-as-usual comparison students on math achievement at the end of one program year. Higher pre-intervention math achievement predicted significantly higher post-intervention math achievement. Additionally, cohort two reported significantly higher post-intervention math achievement than cohort one. Table 5 presents the hierarchical linear model output.

Table 5. *EMPOWER* Math Achievement One-Year Model				
Variable	**Estimate**	**Standard Error**	***t*-value**	***p*-value**
Intercept	101.67	10.64	9.56	< 0.001
Baseline math achievement	0.77	0.02	32.88	< 0.001
Treatment	0.33	1.19	-0.27	0.794
Minority	0.86	0.45	1.88	0.060
English Learner	0.61	1.09	0.56	0.574
Cohort	97.78	0.60	164.30	< 0.001

4.7 Results for Confirmatory Question 4: Math Achievement After Two Program Years

Results indicated no statistically significant difference between the *EMPOWER* students and the business-as-usual comparison students on math achievement at the end of two program years. Higher pre-intervention math achievement predicted significantly higher post-intervention math achievement. Table 6 presents the hierarchical linear model output.

Table 6. *EMPOWER* Math Achievement Two-Year Model				
Variable	**Estimate**	**Standard Error**	***t*-value**	***p*-value**
Intercept	225.15	10.80	20.85	< 0.001
Baseline math achievement	0.72	0.02	30.02	< 0.001
Treatment	-0.34	1.67	-0.20	0.849
Minority	0.27	0.46	0.59	0.556
English Learner	-0.80	1.09	-0.73	0.465

5. DISCUSSION

The *EMPOWER* impact study findings suggest *EMPOWER* did not improve literacy skills or math achievement beyond the impact of business-as-usual programming. However, implementation was a large challenge for the program due to learning interruptions in response to the COVID-19 pandemic. Switching from in-person to e-learning created a barrier to programming as teachers had limited time outside of their classroom duties to engage with the *EMPOWER* team. Restrictions on travel and in-person gatherings resulted in adjustments to reach *EMPOWER* students, teachers, and parents. One success in the spring and summer of 2020 were family engagement nights sponsored by the *EMPOWER* team. These engagement nights were moved online with high success as the program staff reported high turnout and positive verbal feedback. The challenges faced by the *EMPOWER* team mirror ongoing challenges seen across the world in education (Wyse, et al., 2020).

Beyond the impacts of the COVID-19 pandemic, high turnover among program staff and district leadership presented challenges for consistency of implementation. It is important to note that outside of the first year, fidelity of implementation fell below an acceptable threshold (See Appendix B). The limitations of this study make it difficult to appropriately assess the impact of the *EMPOWER* program. Low fidelity of implementation makes it possible that the treatment and comparison groups were aligned more closely than originally designed due to issues implementing key *EMPOWER* activities. Therefore, further research into the *EMPOWER* model is needed to better understand the relationship between academic achievement, race/ethnicity, and *EMPOWER*.

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Appendix A
EMPOWER Fidelity Matrix

Indicators	Definition	Unit of implem-entation	Data Source(s)	Data Collection (who, when)	Score for levels of implementation at unit level	Threshold for adequate implementation at unit level	Roll-up to next higher level if needed (score and threshold): Indicate level	Roll-up to program level (score and threshold for adequate implementation at sample level)	Expected sample for fidelity measure
EMPOWER Advisory Council meetings	Number of committee meetings	Program level	Meeting minutes	Submitted by project director (PD) annually	0 (low) = no meetings 1 (moderate) = 1 meeting 2 (high) = 2 or more meetings	Adequate implementation at program level = score of "1"			1 Program
Barriers to EMPOWER School Participation	Number of barriers to EMPOWER school participation addressed by the EMPOWER Advisory Council	Program level	Meeting minutes	Submitted by PD annually	0 (low) = 49% or fewer barriers addressed 1 (moderate) = 50% - 59% of barriers addressed 2 (high) = 60% or more of barriers addressed	Adequate implementation at program level = score of "1"			1 Program
EMPOWER School Hub Stops	Number of hub stops provided for families outside EMPOWER School attendance zones	Program level	Administrative records	Submitted by PD annually	0 (low) = 12 or less hub stops 1 (moderate) = 13 – 17 hub stops 2 (high) = 18 or more hub stops	Adequate implementation at program level = score of "1"			1 Program
All indicators					Program-level implementation score ranges from 0-6 Low= 0-2 Moderate = 3-4 High = 5-6			Adequate implementation at program level = score of 5 or higher	1 Program

Indicators	Definition	Unit of implementation	Data Source(s)	Data Collection (who, when)	Score for levels of implementation at unit level	Threshold for adequate implementation at unit level	Roll-up to next higher level if needed (score and threshold): Indicate level	Roll-up to program level (score and threshold for adequate implementation at sample level)	Expected sample for fidelity measure
EMPOWER Summer Professional Learning Institute	Percentage of EMPOWER schools that send Implementation Teams to the annual 3-Day Summer Profession Learning Institute	School-level	Attendance records/ stipend forms	Submitted by program coordinator (PC) annually	0 (low) = school does not attend 1 (high) = school attends	Adequate implementation at school level = score of "1"			All EMPOWER Schools
EMPOWER Culturally Responsive Teaching (CRT) Trainings	Number of EMPOWER Culturally Responsive Teaching (CRT) trainings provided to teachers per academic year	School-level	Training agendas and artifacts	School Teams submit agendas to PC quarterly for delivery to evaluator	0 (low) = 1 training provided 1 (moderate) = 2 trainings provided 2 (high) = 3 or more trainings provided	Adequate implementation at school level = score of "2"			All EMPOWER Schools
CRT Training Teacher Participation	Percent of targeted EMPOWER teachers completing three CRT trainings per academic year	Teacher level	Attendance Records	Targeted EMPOWER teachers use an online Professional Learning Log to record their attendance at time of training	0 (low) = 1 training attended 1 (moderate) = 2 trainings attended 2 (high) = 3 or more trainings attended	0 (low) = 59% or fewer teachers with score of "2" 1 (moderate) = 60 – 79% of teachers with score of "2" 2 (high) = 80% of teachers with score of "2"	Adequate implementation at school level = score "1"		All EMPOWER Teachers
Program-specific Training	Percent of targeted EMPOWER teachers	Teacher level	Mandatory end-of-year closeout survey and	Targeted EMPOWER teachers use an online	0 (low) = 0 trainings attended	0 (low) = 59% or fewer teachers with score of 1			All EMPOWER Teachers

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Indicators	Definition	Unit of implem-entation	Data Source(s)	Data Collection (who, when)	Score for levels of implementation at unit level	Threshold for adequate implementation at unit level	Roll-up to next higher level if needed (score and threshold): Indicate level	Roll-up to program level (score and threshold for adequate implementation at sample level)	Expected sample for fidelity measure
Teacher Participation	completing program-specific trainings per academic year		trainingrecords/ artifacts	Professional Learning Log maintained by the evaluator to record their participation in trainings	1 (moderate) = 1 training attended 2 (high) = 2 or more trainings attended	1 (moderate) = 60 – 79% of teachers with score of 1 or 2 2 (high) = 80% or more teachers with score of 1 or 2	Adequate implementation at school level = score "1"		
All indicators					School-level implementation score ranges from 0 -7	Low implementation at school level = 0 – 2 Moderate implementation at school level = 3-5 High implementation at school level = 6-7	Adequate implementation at school level = score of "5"	Adequate implementation at program level = 64% of schools with adequate implementation	All EMPOWER Schools and Teachers

Indicators	Definition	Unit of implem-entation	Data Source(s)	Data Collection (who, when)	Score for levels of implementation at unit level	Threshold for adequate implementation at unit level	Roll-up to next higher level if needed (score and threshold): Indicate level	Roll-up to program level (score and threshold for adequate implementation at sample level)	Expected sample for fidelity measure
Implementation of a non-cognitive curriculum	Number of schools Implementing a non-cognitive curriculum	School-level	Student Empower Counselor (SEC) Log providing evidence of delivery of the non-cognitive curriculum	SECs will maintain counseling logs for submission to evaluator	0 (low) = school does not offer non-cognitive sessions 1 (high) = school does offer non-cognitive sessions	Adequate implementation at school level = score of "1"			All EMPOWER Schools
Individualized student plans	Percentage of schools supporting targeted students with individualized student plans	School-level	Student Empower Counselor (SEC) Log tracking completion of individualized student plans	SECs will maintain counseling logs for submission to evaluator	Adequate implementation at school level 0 (low) = 33% or fewer targeted students with plan 1 (moderate) = 34 – 60% of targeted students with plan 2 (high) = 61% or more of targeted students with plan	Adequate implementation at school level Y1 = score of "1" Y2 -Y3 = score of 2			All EMPOWER Schools
All indicators					School level implementation score ranges from 0 - 3	Low implementation at school-level = score of 0 − 1 Moderate implementation = score of 2 High implementation =score of 3	Y1: Adequate implementation at school level = score of 2 Y2-3: Adequate implementation at school level = score of 3	Adequate implementation at program level = 64% of schools with adequate implementation	All EMPOWER Schools

Indicators	Definition	Unit of implem-entation	Data Source(s)	Data Collection (who, when)	Score for levels of implementation at unit level	Threshold for adequate implementation at unit level	Roll-up to next higher level if needed (score and threshold): Indicate level	Roll-up to program level (score and threshold for adequate implementation at sample level)	Expected sample for fidelity measure
Family Outreach Committee meetings	Number of Family Outreach Committee meetings per academic year	School level	Meeting minutes	School Committees submit agendas to PC quarterly for delivery to evaluator	0 (low) = no meetings 1 (moderate) = 1 meeting 2 (high) = 2 or more meetings	Adequate implementation at school level = score of "2"			All EMPOWER Schools
Outreach Communications	Number of outreach communications from school to families per academic year	School level	Communications publicizing events and resources designed to increase awareness of academic choices (e.g., ConnectEd, newsletters, flyers)	School Committees submit communications to PC quarterly for delivery to evaluator	0 (low) = 0 – 2 communications 1 (moderate) = 3 – 6 communications 2 (high) = 7 – 9 communications	Adequate implementation at school level = score of "1"			All EMPOWER Schools
Parent Outreach Events	Percentage of schools hosting parent outreach events	School level	Event Artifacts and Participation Records	School Committees submit agendas to PC annually for delivery to evaluator	0 (low) = no events 1 (high) = 1 or more events	Adequate implementation at school level = score of "1"			All EMPOWER Schools
Open Houses	Percentage of schools hosting an Open House	School level	Event Artifacts and Participation Records	School Committees submit artifacts/records to PC annually	0 (low) = no Open House 1 (high) = 1 or more Open Houses	Adequate implementation at school level = score of "1"			All EMPOWER Schools
School Choice Fairs	Districtwide school choice fairs designed to	Program level	Event artifacts and participation records	Artifacts submitted by PD annually	0 (low) = no fairs 1 (high) = 1 or more fairs	Adequate implementation at program level = score of "1"			1 Program

Indicators	Definition	Unit of implem-entation	Data Source(s)	Data Collection (who, when)	Score for levels of implementation at unit level	Threshold for adequate implementation at unit level	Roll-up to next higher level if needed (score and threshold): Indicate level	Roll-up to program level (score and threshold for adequate implementation at sample level)	Expected sample for fidelity measure
	increase awareness of school choice options								
All indicators					School-level implementation score ranges from 0 – 6 across first 4 indicators	Low implementation at school level = 0-2 Moderate implementation at school level = 3-4 High implementation at school level = 5-6	Adequate implementation at school level = score of 5 across first 4 indicators	Adequate implementation at program level = 64% of schools with adequate fidelity score of 5 AND Program implementation score = 1 on indicator 5 (School Choice Fairs)	All EMPOWER Schools + 1 Program

Appendix B
EMPOWER Fidelity Results

Findings from Evaluator Study of Implementation: IMPLEMENTATION YEAR 1

Enter calendar year: August 2017 – June 2018

Intervention Component	Implementation measure (total number of measurable indicators representing each component	Number of Units in Which Fidelity of Component Was Measured (# of schools, districts, etc.)	Number of Units in Which the Intervention Was Implemented (# of schools, districts, etc.)	Component Level Threshold for Fidelity of Implementation for the Unit that is the Basis for the Sample-Level	Evaluator's Criteria for "Implemented with Fidelity" at Sample Level	Component Level Fidelity Score for the Entire Sample	Implemented with Fidelity? (Yes, No, N/A)
Planned Intervention Activities [i.e., key components]							
Revise Policies to Promote Diverse Participation in Magnet School Programs and Pipeline Persistence	3	1 EMPOWER Program	1 EMPOWER Program	5	5	6	YES
Provide High-Quality Professional Learning to Increase Rigorous and Culturally Responsive Instruction	4	1 EMPOWER Program with 8 schools	1 EMPOWER Program with 8 schools	64% of EMPOWER schools implement at moderate or high fidelity	64% of EMPOWER schools implement at moderate or high fidelity	100% of EMPOWER schools implement at moderate or high fidelity	YES
Provide Students Comprehensive Wrap-Around Services	2	1 EMPOWER Program with 8 schools	1 EMPOWER program with 8 schools	64% of EMPOWER schools implement at moderate or high fidelity	64% of EMPOWER schools implement at moderate or high fidelity	100% of EMPOWER schools implement at moderate or high fidelity	YES
Engage Families in Academic Choices Early and Throughout Their Child's Academic Career	5	1 EMPOWER Program with 8 schools	1 EMPOWER Program with 8 schools	64% of EMPOWER schools implement at moderate or high fidelity and the EMPOWER Program implements at high fidelity for Indicator 4.5 (EMPOWER School Choice Fair)	64% of EMPOWER schools implement at moderate or high fidelity and the EMPOWER Program implements at high fidelity for indicator 4.5 (EMPOWER School Choice Fair)	100% of EMPOWER schools implement at moderate or high fidelity and the EMPOWER Program implements at high fidelity for indicator 4.5 (EMPOWER School Choice Fair)	YES

Findings from Evaluator Study of Implementation: IMPLEMENTATION YEAR 2

Enter calendar year: August 2018 – June 2019

Intervention Component	Implementation measure (total number of measurable indicators representing each component	Number of Units in Which Fidelity of Component Was Measured (# of schools, districts, etc.)	Number of Units in Which the Intervention Was Implemented (# of schools, districts, etc.)	Component Level Threshold for Fidelity of Implementation for the Unit that is the Basis for the Sample-Level	Evaluator's Criteria for "Implemented with Fidelity" at Sample Level	Component Level Fidelity Score for the Entire Sample	Implemented with Fidelity? (Yes, No, N/A)
Planned Intervention Activities [i.e., key components]							
Revise Policies to Promote Diverse Participation in Magnet School Programs and Pipeline Persistence	3	1 EMPOWER Program	1 EMPOWER Program	5	5	6	YES
Provide High-Quality Professional Learning to Increase Rigorous and Culturally Responsive Instruction	4	1 EMPOWER Program with 12 schools	1 EMPOWER Program with 12 schools	64% of EMPOWER schools implement at moderate or high fidelity	64% of EMPOWER schools implement at moderate or high fidelity	0% of EMPOWER schools implement at moderate or high fidelity	NO
Provide Students Comprehensive Wrap-Around Services	2	1 EMPOWER Program with 12 schools	1 EMPOWER program with 12 schools	64% of EMPOWER schools implement at moderate or high fidelity	64% of EMPOWER schools implement at moderate or high fidelity	50% of EMPOWER schools implement at moderate or high fidelity	NO
Engage Families in Academic Choices Early and Throughout Their Child's Academic Career	5	1 EMPOWER Program with 12 schools	1 EMPOWER Program with 12 schools	64% of EMPOWER schools implement at moderate or high fidelity and the EMPOWER Program implements at high fidelity for Indicator 4.5 (EMPOWER School Choice Fair)	64% of EMPOWER schools implement at moderate or high fidelity and the EMPOWER Program implements at high fidelity for indicator 4.5 (EMPOWER School Choice Fair)	0% of EMPOWER schools implement at moderate or high fidelity and the EMPOWER Program implements at high fidelity for indicator 4.5 (EMPOWER School Choice Fair)	NO