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The Results of a Randomized Control Trial of the Milwaukee Community Literacy Project

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Abstract Body

Limit 4 pages single-spaced.

Background / Context:

The tutoring component of the Investing in Innovations (i3) funded Milwaukee Community Literacy Project (MCLP) is based on the Reading Recovery program. Reading Recovery focuses on in-school tutoring with lesson plans written, and assessments analyzed, by the tutors themselves. In a comparison of early literacy intervention programs, Pinnell et al found that Reading Recovery subjects performed significantly better than any other treatment and comparison group on all measures (Pinnell, Lyons, DeFord, Bryk, & Seltzer, 1994).

The MCLP also contains a strong family engagement component. Involving families in tutoring programs can improve children's academic knowledge, skills and confidence (Bryan, 2005; Harvard Family Research Project, 2009). Encouraging family involvement in educational programs traditionally focuses on families attending events, receiving information from staff, volunteering (Epstein, 2001), and generally exhibiting "good parent" behaviors (Li, 2010). Getting to know families and the ways that their lives are structured outside of the educational setting may lead to a reciprocal relationship that can increase involvement (Graue & Hawkins, 2010). The family component of a program is not only to make families aware of the program's mission and goals but also to empower families in their child's learning both in the program and at home.

Purpose / Objective / Research Question / Focus of Study:

The objective of this study is to measure the impact of the MCLP on reading achievement in two cohorts of participants. One cohort participated for two years in the 2011-2012 and 2012-2013 school years. The other began participation in the 2013-2014 school year and is continuing to participate in 2014-2015.

Setting:

The MCLP is a collaboration between the Boys & Girls Clubs of Greater Milwaukee and the Milwaukee Public Schools (MPS) to provide one-on-one tutoring and family engagement to kindergarten through 3rd grade students in seven predominantly low-income and minority elementary schools.

MPS, a district serving over 80,000 students, faces a significant challenge to teach its students how to read and write. According to the Wisconsin Knowledge and Concepts Examination (WKCE) only 15% of MPS students were proficient in reading (2011). This is in comparison to 35% statewide. The results of the WKCE are consistent with results of the National Assessment of Educational Progress (NAEP) and the ACT, which show that MPS students struggle with literacy throughout their education. 15% of 4th grade MPS students are proficient in reading (NAEP, 2011) while 14% of MPS 11th graders scored at least 21 on the ACT Reading Test, the benchmark identified for college readiness (Independent Analysis). The results of the NAEP further show that there are significant achievement gaps for minority and low-income students. 39% of 4th grade, White MPS students are proficient in reading, compared to 7% of Black and 15% of Hispanic students. 7% of 4th grade low-income (free/reduced lunch participants) MPS students are proficient in reading, compared to 48% of non-low-income students. These data demonstrate that the need for increased literacy

opportunities in the Milwaukee area is urgent, and that this need is even more pronounced for low-income and minority students.

Population / Participants / Subjects:

Cohort 1:

A total of 496 students consented to participate in the first cohort. Of these, 245 were selected to participate in the MCLP and 251 were selected as control students. Of the 496 students, 165 were in kindergarten, 177 in first, and 154 in second. 480 were eligible for free or reduced lunch, 404 were (81%) African American, and 57 (12%) Hispanic.

Attrition was a problem during the two years that students participated. 223 students were excluded from the final analysis due to attrition, which represents a 45.0% overall attrition rate. However, it is important to note that students were excluded for exogenous reasons, like not taking the pre-test (5 students), moving away (186), being identified for a reading disability (30), and not taking the post-test (2). Regarding differential attrition, 107 (43.7) of participants and 116 (46.2%) of control students dropped out. The 2.5% differential attrition rate, along with the 45.0% overall attrition, and the exogenous nature of why students were dropped, suggests that the internal validity of the cohort 1 evaluation remained intact.

Cohort 2:

A total of 576 students across seven schools consented to participate in the second MCLP cohort. 286 students were randomly selected as MCLP participants and 290 as control students. Of the 576 students, 205 are in kindergarten, 214 in first, and 157 in second. 549 (95%) are eligible for free or reduced lunch, 459 (80%) African American, 71 (12%) Hispanic, and 51 (9%) have an IEP for speech/language. During the first year of participation, only 47 (8%) students dropped, all because they moved to another school. This included 20 (7%) participants and 27 (9%) control students.

Intervention / Program / Practice:

Students are tutored during the school year for 30 minutes, up to three times per week, for two years. At each site, a program manager, who is also a certified teacher, oversees the tutors. There is a set lesson plan template for tutors and students to follow during each tutoring session. After this activity, the tutor administers a running record assessment (this occurs every third lesson). This is followed by phonics activities. Next, the student reads a book that is at his/her instructional level and then does a writing activity. Finally, the tutor reads a portion of a book aloud.

All students are assessed with the PALS (Phonological Awareness Literacy Screening) at the beginning of the school year. This assessment is used to determine each student's needs and help create individual lesson plans. Tutors complete all-program trainings at the beginning of the year, as well as follow-up training several times throughout the year. In addition, they receive training at their sites given by program managers. Tutors are observed at least monthly by program managers and receive feedback following these observations.

Each site has a parent partner who works with each participating student's family. Their work is designed to bridge the divide between school and home by translating literacy concepts, educating families about a variety of literacy activities, and validating the literacy practices already happening in the home. Parent partners help families see how they already are incorporating literacy into their children's lives and show parents how to promote literacy more

effectively. Parent partners stay connected with families through a monthly newsletter, monthly family events at each site, and phone calls or emails. These communications are designed to keep families aware of student progress in MCLP, help families promote literacy at home, and address any attendance issues that arise during the program. Parent partners also conduct home visits for all students twice during the summer between their first and second year of participation. These visits are viewed as opportunities to connect with the family in their own space and learn about the literacy activities already taking place in the home.

Research Design:

The evaluation utilizes a randomized control trial to isolate the impact of MCLP on reading achievement. A random selection of kindergarten, 1st, and 2nd grade students in six MPS schools were selected to participate in Cohort 1 during the 2011-2012 school year. A second cohort was selected to participate in seven schools during the 2013-2014 school year. Students were randomly selected in the fall of each year and stratified by school and grade level within school. Students with a reading-related IEP or who were English Language Learners, were not eligible for participation in the evaluation but were eligible to receive tutoring.

The primary outcome used to evaluate the MCLP is the Measures of Academic Progress (MAP) reading assessment published by the Northwest Evaluation Association (NWEA). The MAP is an on-line, adaptive assessment that has been shown to be both valid and reliable. MPS administers the MAP to all students three times each year, in the fall, winter, and spring. As such, to measure the impact of the MCLP on the first cohort, the evaluation was able to use the fall of 2011 MAP results as the pre-test and the spring of 2013 results as the post-test. To measure the impact of the MCLP on the second cohort, the evaluation uses the fall of 2013 MAP results as the baseline and will use the spring of 2015 results as the post-test. The spring of 2014 MAP results are used to measure interim results.

MPS uses the MAP for Primary Grades (MPG) for kindergarten, 1st grade, and 2nd grade students. 3rd grade students take the MAP. The MPG is vertically aligned to the MAP, so that the same score on both assessments suggests the same reading achievement level. The main difference between the two is that the MPG includes auditory technology to help students complete the assessment.

The statistical analysis of the MCLP follows an Intent to Treat Model, where students selected to participate in the MCLP are included in the analysis regardless of how much tutoring they received. This is done to maximize the internal validity of the study. However, due to missing data, both participant and control students who moved away or were identified as having a disability that prevented them from receiving literacy tutoring were excluded from the analysis.

Data Collection and Analysis:

The project has a data sharing agreement with the Milwaukee Public Schools (MPS) that allows it to access achievement results (MPG, MAP, PALS) and student demographics. The project itself maintains participation records and fidelity of implementation results.

To analyze the impact of the MCLP, the evaluation used separate generalized linear statistical models with robust standard error estimators to compare the reading achievement growth of participants and controls for kindergarten, first, and second grade students. The results of the three models were then pooled to estimate the overall impact of the MCLP for each cohort. Post reading achievement scores were standardized to improve interpretability.

For cohort 1, all three grade-level models predicting post MAP/MPG scores controlled for the separate fixed interactions of school effects with both baseline fall 2011 MAP/MPG reading and MAP/MPG math results. The fixed effects of gender, race, disability status, and free/reduced lunch eligibility were also tested in the model. Ultimately, only the main effect of race was found to uniquely predict MAP/MPG reading results and was included in the model. The rest were excluded because they were not found to uniquely predict post-test reading achievement.

For cohort 2, all three grade-level models predicting post MPG scores controlled for the fixed interaction of baseline MPG reading and school effects. The kindergarten and first grade models also controlled for the fall results of the Phonological Awareness Literacy Screener (PALS), used for the first time by MPS with its kindergarten and first grade students. MPG math baseline scores was considered as a covariate, but its inclusion in the kindergarten and first grade models did not reduce standard errors nor improve model fit, so it was not included. However, MPG math baseline scores did improve model fit and reduce standard errors for second grade students, so was included in that model. Spring 2014 PALS results were also tested for first and second grade students using the same model.

Findings / Results:

After two years of participation, the MCLP was found to have a small but significant impact on the reading achievement of the first cohort (0.12 standard deviations) (Table 1). However after only one year of participation, the MCLP was found to have a similar impact on the MAP/MPG scores of the second cohort (0.12 standard deviations) (Table 2). Second cohort MCLP participants also scored higher on the PALS; scores were .438 and .372 standardized units higher than control students ($p < .0001$). Pooled together, these results indicate that the MCLP had a large impact (.40 standardized effect) on spring PALS scores ($p < .0001$).

Conclusions:

The results of the evaluation of the MCLP are promising. Tested with rigorous evaluation methods, a randomized-control framework, the MCLP was found to have a statistically significant impact on the reading development of participants. Although attrition was a problem for the first cohort, there is no evidence that it affected the internal validity of these findings. There is also evidence that changes to the delivery of the MCLP from the first to the second cohort, improved its effectiveness. Specifically, the program revised its approach to working with kindergarten students.

Taken together, these results suggest that the MCLP is a promising program for helping to address the serious challenge facing the Milwaukee Public Schools of teaching students to read.

Appendices

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Appendix A. References

References are to be in APA version 6 format.

- Bryan, J. (2005). Fostering educational resilience and achievement in urban schools through school-family-community partnerships. *Professional School Counseling, 8*(3), 219.
- Graue, E. and Hawkins, M. (2010). "I always feel like they don't know anything about us": Diverse families talk about their relations with school. In Miller-Marsh, M. and Turner-Vorbeck, T. (Eds.) *(Mis)Understanding Families: Learning from real families in our schools* (pp.109-125) New York, NY: Teachers College Press.
- Harvard Family Research Project. (2009a). *Supporting student outcomes through expanded learning opportunities*. Cambridge, MA: Little, P. M. D.
- Epstein, J.L. (2001). *School family, and community partnerships: Preparing educators and improving schools*. Boulder, CO: Westview Press.
- Li, G. (2010). Social class, culture and "good parenting": Voices of low-SES families. In Miller-Marsh, M. and Turner-Vorbeck, T. (Eds.). *(Mis)Understanding Families: Learning from real families in our schools* (pp.162-178). New York, NY: Teachers College Press.
- Lopez, G.R. & Stoeling (2010). Disarticulating parent involvement in Lation-impacted schools in the Midwest. In Miller-Marsh, M. and Turner-Vorbeck, T. (Eds.). *(Mis)Understanding Families: Learning from real families in our schools* (pp.19-36). New York, NY: Teachers College Press.
- Nieto, S. (2012). Honoring the lives of all children: Identity, culture, and language. In B. Falk (ed.) *Defending Childhood: Keeping the Promise of Early Education* (pp. 48-62). New York, NY: Teachers College Press.
- Pinnell, G. S., Lyons, C. A., DeFord, D. E., Bryk, A., & Seltzer, N. (1994). *Reading Research Quarterly, 29*, 8-39.

Appendix B. Tables and Figures

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Table 1: MCLP 1st Cohort Final MAP/MPG Results

	Standardized Effect	Robust Standard Errors	p- value
MCLP Kindergarten	0.012	0.123	
MCLP First	0.118	0.143	
MCLP Second	0.288	0.138	
Overall Impact (Weighted Pooled Results)	0.122	0.061	<.05

Table 2: MCLP 2ND Cohort Interim MPG Results

	Standardized Effect	Robust Standard Errors	p- value
MCLP Kindergarten	0.117	0.0968	0.227
MCLP First	0.177	0.0641	0.006
MCLP Second	-0.047	0.1114	0.664
Overall Impact (Weighted Pooled Results)	0.12	0.0482	<.01

Table 3. MCLP 2ND Cohort Interim PALS Results

	Standardized Effect	Robust Standard Errors	p-value
MCLP Kindergarten	0.438	0.0895	<0.0001
MCLP First	0.372	0.0775	<0.0001
Overall Impact (Weighted Pooled Results)	0.400	0.0443	<.0001