Pathways to Success:

Developing and Testing a Scalable Identity-Based Motivation Intervention in the Classroom

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Background/Context:

Nearly one in five Americans does not graduate from high school (U.S. Department of Education, 2017) and risk of dropout disproportionally affects economically disadvantaged, racial/ethnic minorities. Dropout occurs for many reasons but usually results from cumulative disengagement with school (Fine, 1991; Orfield et al., 2004). The middle school years offer a critical intervention point for two reasons: (1) simple criteria (e.g., course failure) during middle school predict dropout (Balfanz, Herzong, & MacIver, 2007; Neild, Balfanz, & Herzog, 2007); and (2) intervening prior to high school is ideal because disengagement rarely results from students' diminished desire to do well academically but rather from a failure to connect long-term future goals to immediate performance and invest appropriate self-regulatory effort (Oyserman, 2012, 2015).

Identity-Based Motivation (IBM) interventions that make the future feel close (by focusing students on their future selves) and school feel like the path to get there have been shown to improve academic outcomes (Oyserman, 2012, 2015). In a randomized control trial conducted in Detroit (Oyserman et al., 2006), one brief, IBM intervention administered in 8th grade called *School-to-Jobs* demonstrated improvements in self-regulatory behaviors (decreased unexcused absences, increased time spent doing homework, increased initiative in classroom; decreased disruptive behaviors) and academic outcomes (core subject GPA, test scores, retention) among low-income, at-risk eighth-grade students. Significant effects persisted or grew larger across the transition to high school two years post-intervention and effects were mediated by changes in IBM. Although this study provided a rigorous test of theory, the intervention was led by external trainers and is not scalable.

Objective/Research Questions:

Under a development grant from the Institute of Education Sciences (IES), and a research-practice partnership with Chicago Public Schools (CPS), we developed and pilot-tested a scalable teacher-led, teacher-trained adaptation of the intervention called *Pathways to Success (Pathways).* This paper highlights refinements to enhance usability/feasibility of implementation. A pilot study examined the following research questions:

1. To what extent can eighth-grade teachers implement *Pathways* with fidelity?
2. What is "impact" of *Pathways* on eighth-grade student academic outcomes?

Setting:

CPS is the third-largest U.S. school district (480 K–8 schools), and mirrors other U.S. urban districts: 74% graduation rate; a majority (80%) of students come from low-income families and are minorities (e.g., 38% Black, 47% Hispanic); 17% have limited English proficiency.

Population/Participants/Subjects:

Across two school years (2014-15, 2015-16) five K-8 elementary schools, 15 eighth-grade teachers, and 380 eighth-grade students participated (see Table B-1 for characteristics of participating schools).

Intervention:

Pathways involves small-group activities presented twice weekly for 30-45 minutes in class over the first six weeks of the school year. Each session involves an activity focused on a particular take-home point. Activities build on one another and activate each of the elements of IBM. Implementation is guided by a manual for teachers, and demonstrated via a video library. The theory of change (Figure B-1) predicts that *Pathways* will increase IBM (possible identities and strategies to attain them and interpretations of difficulty). IBM, in turn, facilitates self-regulatory behaviors, resulting in better academic outcomes.

Research Design:

We iteratively refined and tested *Pathways* implementation resources. First, we simplified the manual to facilitate usability. Second, we developed sustainable materials to implement each activity, requiring little-to-no continued costs of implementation. Third, we operationalized what quality delivery looks like in each session. Fourth, we created sensitive, quality-of-delivery fidelity measures that can be reliably coded from video. Fifth, we created a website for teachers, including the implementation manual, all handouts, PowerPoint presentation, and videos for each session. Sixth, we produced a set of video clips that articulate the underlying theory and how it relates to specific activities. Seventh, we conducted the same iterative process for the trainer manual and materials.

To address the research questions, fidelity was assessed via video-observation and student self-report. Student outcomes were assessed via a *propensity-matched* quasi-experimental design to minimize selection bias and maximize internal validity in the absence of random assignment.

Data Collection:

The study team video-recorded all 12 sessions for all teachers. Following Durlak and Dupre (2008) we assessed how much of the intended intensity and duration of intervention was delivered (*dosage*), whether delivery followed protocol (*adherence*), whether active ingredients were delivered (*quality*), whether students responded to ingredients as intended (*student responsiveness*), and whether students understood the intervention (*fidelity of receipt*).

Student administrative data from prior years and during eighth-grade were collected from the district to assess outcomes.

Analysis:

First, we calculated propensity scores using a selection model. Second, we employed 1:1 matching without replacement to match students who participated in treatment schools with similar students in non-treatment schools within the same network (sub-geographic region of Chicago). Third, we calculated the average treatment effect on the treated, using a regression to estimate effects of participating in *Pathways*, controlling for student characteristics, cohort, and network.

Findings/Results:

Teachers implemented with moderate-to-high fidelity, and implementation resulted in positive academic outcomes for students. Durlak and Dupree (2008) suggest that most interventions achieve fidelity of implementation if they implement with 60% or higher fidelity, and note that

few studies attain greater than 80%. Fidelity for this study averaged 79%, ranging from 69 to 91%. Analyses of student outcomes are promising: Treatment and matched-comparisons students did not differ at baseline (*d's*=0-0.09) but students in schools that participated in *Pathways* during the 2014–15 and 2015–16 school years had significantly higher GPAs (*d*=0.35), were less likely to fail a course (Cox Index=-0.35) and averaged fewer course failures (Cox Index=-0.30). We did not find impacts on attendance—the unexcused absence rate was low (2%) for both treatment and comparison groups, reflecting the 93% districtwide attendance rate (Chicago Public Schools, 2016).

Conclusions:

Though preliminary, our study suggests the following conclusions:

- Eighth-grade teachers can implement *Pathways* with moderate-to-high fidelity.
- Pilot analyses of outcomes show promise for students—improving course performance and reducing risk of course failure in eighth grade.
- Future research employing an experimental design is needed to test the impact of *Pathways* on student outcomes.

Appendices

(Not included in word count)

Appendix A. References

Balfanz, R., Herzog, L., & Mac Iver, D. J. (2007). Preventing student disengagement and keeping students on the graduation path in urban middle-grades schools: Early identification and effective interventions. *Educational Psychologist, 42*(4), 223–235. http://eric.ed.gov/?q=balfanz+herzog&id=EJ780922

Chicago Public Schools. (2016). *CPS Students Achieve Record-High Attendance Last School Year* [Press Release]. Retrieved from http://cps.edu/News/Press_releases/Pages/PR1_08_16_2016.aspx

Durlak, J. A., & Dupre, E. P. (2008). Implementation matters: A review of research on the influence of implementation on program outcomes and the factors affecting implementation. *American Journal of Community Psychology*, *41*, 327–350.

Fine, M. (1991). *Framing dropouts: Notes on the politics of an urban public high school*. Albany, NY: State University of New York Press.

Neild, R., Balfanz, R., & Herzog, L. (2007). An early warning system. *Educational Leadership* 65(2), 28–33. Retrieved from http://new.every1graduates.org/wp-content/uploads/2012/03/Early_Warning_System_Neild_Balfanz_Herzog.pdf

Orfield, G., Losen, D., Wald, J., & Swanson, C. (2004). *Losing our future: How minority youth are being left behind by the graduation rate crisis.* Cambridge, MA: The Civil Rights Project at Harvard University.

Oyserman, D. (2012). Working with culturally/racially diverse students to improve connection to school and academic performance. In C. Franklin, M. Harris, & P. Allen-Meares (Eds.), *The school services sourcebook: A guide for social workers, counselors, and mental health professionals*, 2nd edition (pp. 733–746). New York: Oxford University Press.

Oyserman, D. (2015). *Pathways to success through identity-based motivation*. New York, NY: Oxford University Press.

Oyserman, D., Bybee, D., & Terry, K. (2006). Possible selves and academic outcomes: How and when possible selves impel action. *Journal of Personality and Social Psychology*, *91,* 188–204.

U.S. Department of Education (2017). *Public High School Graduation Rates*. Retrieved from https://nces.ed.gov/programs/coe/indicator_coi.asp

Appendix B. Tables and Figures

Table B-1. Characteristics of participating schools

School Characteristic	School 1	School 2	School 3	School 4	School 5
Grades	Pre K–8	K–8	Pre K–8	Pre K–8	K–8
Total Number of Students	1,580	775	286	817	806
Number of Participating Eighth-Grade Teachers	5	3	1	3	3
Number of Participating Eighth-Grade Students	103	84	21	82	98
Schoolwide Percentage Hispanic/Latino	96%	31%	0%	67%	28%
Schoolwide Percentage Black	1%	22%	100%	31%	1%
Schoolwide Percentage Asian	0%	38%	0%	0%	6%
Schoolwide Percentage White	2%	7%	0%	1%	60%
Schoolwide Percentage Other	1%	2%	0%	1%	5%
Schoolwide Percentage Low Income	98%	94%	95%	99%	37%
Schoolwide Percentage Limited English	43%	43%	0%	29%	21%
Schoolwide Mobility Rate	21%	14%	37%	28%	11%
Eighth-Grade NWEA Reading Growth 2014 Percentile	99	98	5	22	98
Eighth-Grade NWEA Math Growth 2014 Percentile	94	66	98	13	91
Eighth-Grade Student Attainment Reading Percentile	79	88	21	59	92
Eighth-Grade Student Attainment Math Percentile	59	81	37	59	91
Geographic Region of City	Northwest Side	Northern Side	Far Southeast Side	West Side	Far North Side
Number Suspensions / 100 Students	0.6		3.6	14.1	0.5

NOTE: The national average for NWEA Growth in Reading and Math is the 50th percentile, and the national average student attainment in reading and math is the 50th percentile.

Figure B-1. *Pathways* Theory of Change