Measuring the Effectiveness of the *Empowering Education* Curriculum

To measure the effectiveness of Empowering Education's foundational lessons promoting social and emotional learning, both students and teachers were surveyed at three points during the school year. Third through eighth grade students from Denver Green School were surveyed at the beginning, middle, and end of the 2014-2015 school year. In addition, teachers from Denver Green School were asked to rate a randomly selected group of K-8 students, reflecting on social and emotional skills at the same three points throughout the year. Research is ongoing during year 2 of implementation at Denver Green School and at new partner schools during the 2015-2016 school year.

During the school year, students participated in 30 lessons developed to promote positive behaviors through the *Empowering Minds: A Mindfulness-Based Social Emotional Learning (SEL) Curriculum.* This curriculum is comprised of foundational lessons that directly support the five core competencies of the Collaborative for Social Emotional Learning (CASEL). The lessons are a product of five years of hands-on experience teaching and developing SEL in public schools. The lessons are experiential, fun, focused, and written in a way that will allow any teacher to deliver the content with minimal training. *Empowering Minds* is intentionally designed on the basis of three theoretical models: **mindfulness**, **brain-based learning,** and **cognitive behavioral therapy.** Combining these evidence-based models provides students with a wide range of tools and knowledge, increasing SEL competencies, and enabling more success navigating the complexities of relationships, emotions, thoughts, and behaviors. More information can be found at www.empoweringeducation.org.

Surveys developed by *Child Trends* were selected as the survey instruments. These research-based surveys are designed to measure five specific social-emotional skills: (1) self-control, (2) academic self-efficacy, (3) persistence, (4) social competence, and (4) mastery orientation. The table below describes each skill and lists the student and teacher survey items associated with each. Note that *Child Trends*

recommends that information on certain skills be collected via only the student survey or the teacher survey.

Table 1. Skill Descriptions and Survey Items

Skill	Description	Student Survey Items	Teacher Survey Items
Self-Control	A student having the ability to: a) control emotions behavior, b) inhibit negative behavior, c) sustain attention or concentrate on a given task, and d) wait for his or her turn or for what he or she wants.	5 items: -I can wait in line patiently. -I sit still when I'm supposed to. -I can wait for my turn to talk in class. -I can easily calm down when excited. -I calm down quickly when I get upset.	3 items: -Waited in line patiently. -Sat still when he/she was supposed to. -Waited for what he/she wanted.
Academic Self-Efficacy	A student's belief that he or she can effectively perform a variety of academic tasks.	3 items: -I can do even the hardest homework if I try. -I can learn the things taught in school. -I can figure out difficult homework.	None
Persistence	A student choosing to continue toward a goal in spite of obstacles, difficulties, or discouragement. For persistence to be present, a student's actions must be voluntary and indicate an underlying determination to continue at a task or goal despite challenges of failure that may occur along the way.	3 items: -If I solve a problem wrong the first time, I just keep trying until I get it right. -When I do badly on a test, I work harder the next time. -I always work hard to complete my school work.	3 items: -Worked on tasks until they were finished. -Kept working on an activity that was difficult. -Focused on tasks until they were finished.
Mastery Orientation	A student's desire to complete work in order to learn and improve their skills and ability rather than for external validation.	3 items: -I do my schoolwork because I like to learn new things. -I do my schoolwork because I'm interested in it. -I do my schoolwork because I enjoy it.	None

Skill	Description	Student Survey Items	Teacher Survey Items
Social Competence	A student having the ability to: a) understand and take peers' perspective, b) work well with peers to accomplish a task, c) resolve problems in ways that maximize positive consequences and minimize negative consequences for oneself and one's peers, and d) behave appropriately according to the situation or social norms.	None	5 items: -Worked well with peers. -Resolved problems with peers without becoming aggressive. -Was thoughtful of the feelings of his/her peers. -Cooperated with peers without prompting. -Understood the feelings of his/her peers.

Student and teacher survey responses were coded as directed by the *Child Trends* survey scoring guide.

Response codes are shown in the table below.

Table 2. Response Codes

Response Option	Code
None of the time	1
A little of the time	2
Most of the time	3
All of the time	4

Teacher Survey

Four teachers from Denver Green School were asked to complete surveys regarding a random sample of five of their students. One teacher was selected from each of the following grade levels: second, third, fifth, and eighth grade. Teachers were surveyed at the end of the 2014-2015 school year and asked to reflect back on their students' skills at both the beginning of the year and mid-year.

Beginning, middle, and end-of-year (pre, mid, and post) responses were matched for each student. The analysis was confined to 20 students for the pre-post comparison and 19 students for the pre-mid and mid-post comparisons since one student was missing data for the mid-year timeline.

Once the teacher survey responses were paired and coded, an average pre, mid, and post score was calculated for each student in each of the three skill areas.

To determine if skill scores increased throughout the school year, a series of nine paired sample t-tests were performed to compare the average scores for each skill area as follows: a) pre to mid, b) mid to post, and c) pre to post.

There was a significant increase in student scores for in all skill areas when measured from mid-year to end-of-year and beginning to end-of-year. There was also a significant increase in *Persistence* and *Social Competence* scores when measured from the beginning of the year to mid-year. Figures are shown in the tables below.
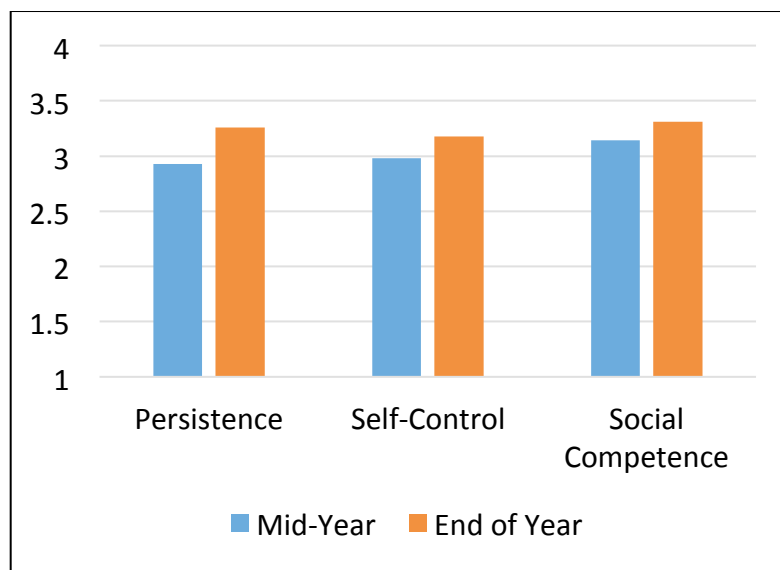
Table 3. Skill Gains as Measured by Teacher Survey – Beginning to Mid-Year

Skill	Sample Size	Pre Score Mean	Pre Score Standard Deviation	Mid Score Mean	Mid Score Standard Deviation	p-value	Statistically Significant?
Persistence	19	2.61	0.94	2.93	0.81	0	Yes
Self-Control	19	2.82	0.74	2.98	0.82	0.06	No
Social Competence	19	2.85	0.80	3.14	0.64	0	Yes

Chart 1. Skill Gains as Measured by Teacher Survey – Beginning to Mid-Year
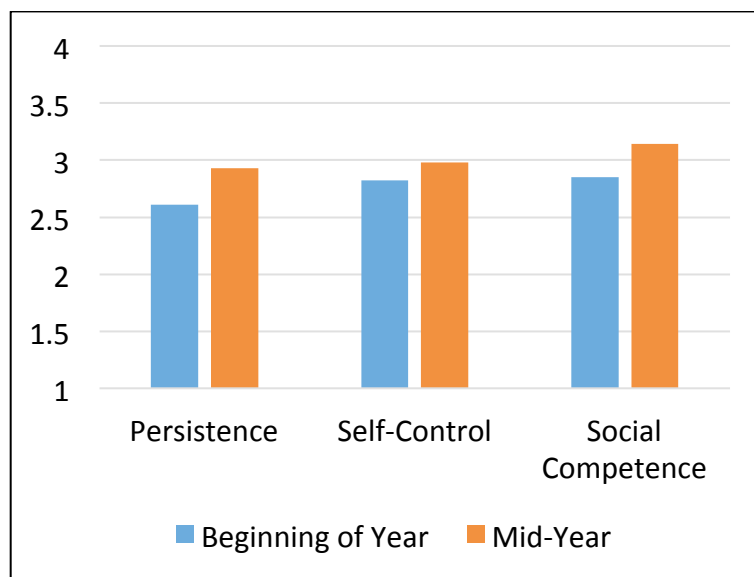
Table 4. Skill Gains as Measured by Teacher Survey – Mid-Year to End of Year

Skill	Sample Size	Mid Score Mean	Mid Score Standard Deviation	Post Score Mean	Post Score Standard Deviation	p-value	Statistically Significant?
Persistence	19	2.93	0.81	3.26	0.64	0	Yes
Self-Control	19	2.98	0.82	3.18	0.83	0.01	Yes
Social Competence	19	3.14	0.64	3.31	0.64	0.02	Yes

Chart 2. Skill Gains as Measured by Teacher Survey – Mid-Year to End of Year

Table 5. Skill Gains as Measured by Teacher Survey – Beginning of Year to End of Year

Skill	Sample Size	Pre Score Mean	Pre Score Standard Deviation	Post Score Mean	Post Score Standard Deviation	p-value	Statistically Significant?
Persistence	20	2.63	0.92	3.22	0.66	0	Yes
Self-Control	20	2.83	0.72	3.12	0.85	0.03	Yes
Social Competence	20	2.83	0.78	3.26	0.66	0	Yes

Chart 3. Skill Gains as Measured by Teacher Survey – Beginning to End of Year
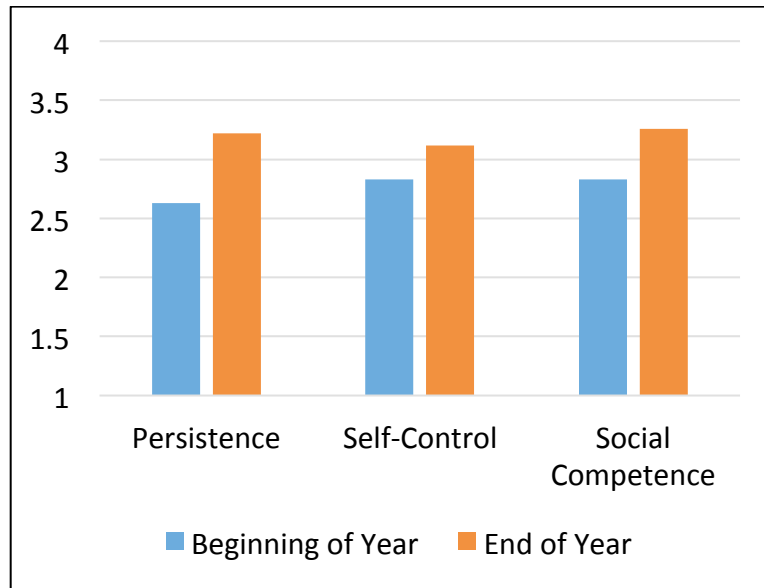
These results suggest that, when rated by teachers, the *Empowering Education* curriculum has a positive impact on three social and emotional skills: *Persistence*, *Self-Control*, and *Social Competence*.

Student Survey

According to the *Child Trends* scoring guide, a student's self-perception of his or her behavior may differ from others' perceptions. *Child Trends'* recommends that the teacher's score be used if student and teacher scores are discrepant since "teachers are likely a more reliable reporter on these skills." Indeed, Brackett, Rivers, Shiffman, Lerner, and Salovey (2006) found that self-ratings were not strongly correlated with performance measures of emotional intelligence nor did self-ratings predict real-time social competence. Roberts, Zeidner, and Matthews (2001) also advocate performance-based measures over self-ratings as being more likely to validly assess emotional intelligence.

Beginning, mid-year, and end-of-year (pre, mid, and post) responses were matched for each student.

The analysis was confined to 176 students for the pre-post and pre-mid comparisons and 183 students for the mid-post comparisons since not all students completed all three surveys. Thirty-five students completed a beginning of the year survey but no mid-year survey; 42 students completed a mid-year survey but no beginning of the year survey; 35 students completed a mid-year survey but no end-of-year survey; 33 students completed an end-of-year survey but no mid-year survey; 35 students completed a beginning of the year survey but no end-of-year survey; and 42 students completed an end-of-year survey but no initial survey.

Once the student survey responses were paired and coded, an average pre, mid, and post score was calculated for each student in each of the four skill areas measured by the survey.

To determine if skill scores increased throughout the school year, a series of twelve paired sample t-tests were performed to compare the average scores for each skill area as follows: a) pre to mid, b) mid to post, and c) pre to post.

The only significant increases found were in the areas of *Persistence* when measured from mid-year to end of year and *Mastery Orientation* when measured from beginning of year to mid-year and mid-year to end of the year. Figures are shown in the tables below.

Table 6. Skill Gains as Measured by Student Survey – Beginning to Mid-Year

Skill	Sample Size	Pre Score Mean	Pre Score Standard Deviation	Mid Score Mean	Mid Score Standard Deviation	p-value	Statistically Significant?
Self-Control	176	3.02	0.70	3.08	0.75	0.11	No
Academic Self-Efficacy	176	3.30	0.66	3.28	0.68	0.38	No
Persistence	176	3.43	0.59	3.38	0.66	0.19	No
Mastery Orientation	176	2.97	0.83	2.81	0.90	.01	Yes

Chart 4. Skill Gains as Measured by Student Survey – Beginning to Mid-Year
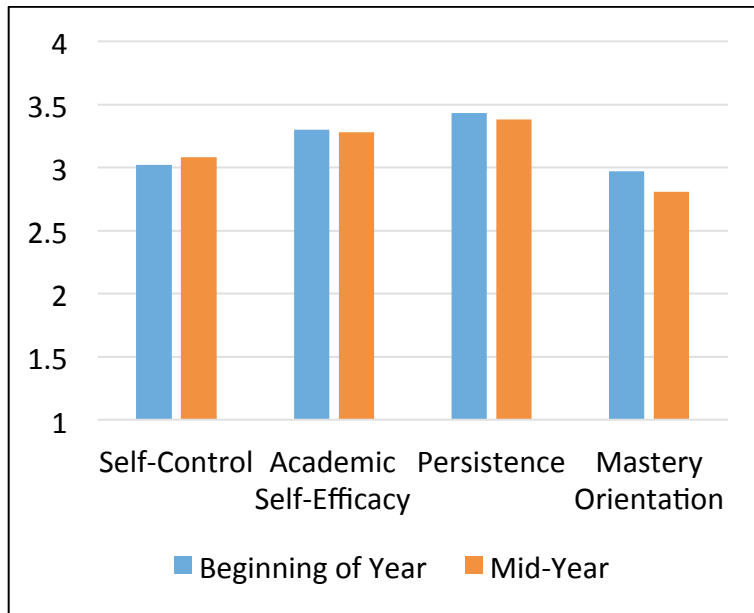
Table 7. Skill Gains as Measured by Teacher Survey – Mid-Year to End of Year

Skill	Sample Size	Mid Score Mean	Mid Score Standard Deviation	Post Score Mean	Post Score Standard Deviation	p-value	Statistically Significant?
Self-Control	183	3.05	0.75	3.06	0.68	0.44	No
Academic Self-Efficacy	183	3.26	0.67	3.26	0.71	0.49	No
Persistence	183	3.31	0.68	3.42	0.62	0.02	Yes
Mastery Orientation	183	2.81	0.89	2.94	0.81	0.01	Yes

Chart 5. Skill Gains as Measured by Student Survey – Mid-Year to End of Year
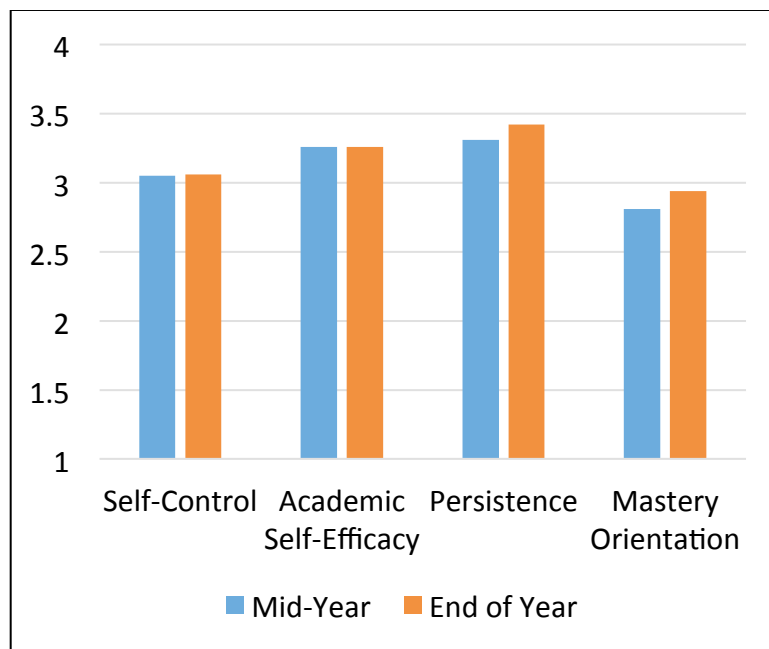

Table 8. Skill Gains as Measured by Student Survey – Beginning of Year to End of Year

Skill	Sample Size	Pre Score Mean	Pre Score Standard Deviation	Post Score Mean	Post Score Standard Deviation	p-value	Statistically Significant?
Self-Control	176	3.01	0.70	3.07	0.67	0.08	No
Academic Self-Efficacy	176	3.26	0.70	3.30	0.70	0.25	No
Persistence	176	3.43	0.62	3.40	0.65	0.28	No
Mastery Orientation	176	2.92	0.84	2.90	0.80	0.46	No

Chart 6. Skill Gains as Measured by Student Survey – Beginning to End of Year
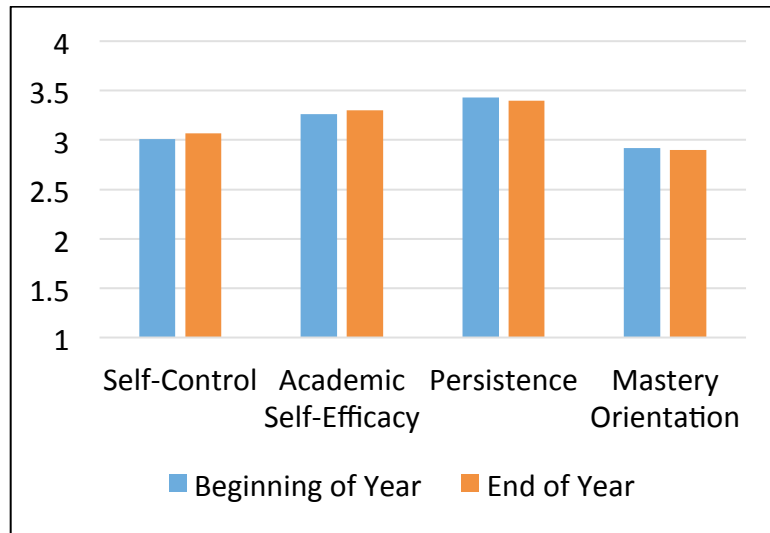
These results suggest that the Empowering Education curriculum has a positive impact on certain social and emotional skills, specifically, those associated with persistence and an orientation towards mastery.

References

Brackett, M. A., Rivers, S. E., Shiffman, S., Lerner, N., & Salovey, P. (2006, Oct). Relating emotional abilities to social functioning: A comparison. *Journal of Personality and Social Psychology, 91*(4), pp. 780-795.

Roberts, R. D., Zeidner, M., & Matthews, G. (2001). Does emotional intelligence meet traditional standards for an intelligence? Some new data and conclusions. *Emotion, 1*(3), pp. 196-231.