



TOP Early Learning Centers Longitudinal Research Project Report 2008-2020 SUMMARY

TOP Data Collection

To answer the question of whether high-quality, early education creates improved life outcomes for children living in poverty, we have collected data for thirteen years for the longitudinal research project that will follow TOP (The Opportunity Project) Early Learning Centers' graduates throughout their school years and into adulthood. For this report, teachers responded to surveys that compared the social skills in the areas of appropriate behavior, competent social interactions, and emotional maturity of TOP graduates (from kindergarten through fifth grades) with the remainder of students in their classrooms. Typically each year, to measure academic standing, we would collect state standardized test scores from third through the eighth grades and high school grades, and grade point averages (GPAs), as well as suspensions for the middle school students and high school ninth through twelfth graders. Additionally, in past years, special education placements were collected for all grades and attitudinal data on attendance and repeat discipline referrals for kindergarten through twelfth grades were collected. Given the current pandemic and the fact that all schools were closed March 2020, these data were not able to be collected or analyzed this year.

Social Skills Survey Data Analysis

Social skills were measured on three dimensions: behavior, social interactions, and emotional maturity. More than 90% of TOP graduates ranked at or above the middle of their classes on all three measures. Furthermore, more than 37% of TOP graduates ranked in the top 20% of their classes in these dimensions.

FINAL REPORT, 2008-2020

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The TOP Longitudinal Research Project has completed its thirteenth year and this year we collected data from teachers of students in kindergarten through the fifth grades in the Derby (USD 260) and Wichita (USD 259) school systems in Kansas. We asked teachers of TOP graduates in kindergarten through fifth grades to respond to a social skills survey consisting of questions pertaining to behavior, social interactions, and emotional maturity.

There were 2,027 students for which parents had signed consent forms (a 96% participant rate) agreeing that their children could participate in the study. Students who attended a TOP Early Learning Center for at least eight months prior to kindergarten and had a consent form signed by a parent were deemed eligible for the study.

We were able to locate 1,466 of these children in the two school systems during the 2019-2020 school year. Table 1 provides the details of the numbers of students who were eligible for the study, the number of students we were able to locate, and the response rate for the social skills survey for the kindergarten through fifth grades. Both school systems had a 100% response rate from their teachers. Because the number of TOP graduates has increased substantially, beginning with the 2014-2015 school year, we began randomly selecting 150 newly graduated, eligible TOP students to participate in the study.

Table 1

Grade of TOP Child, Number of Consent Forms, Percentage of Children Participating in the Longitudinal Study, Number of Students Located in Derby and Wichita Public Schools, Number of Surveys Received from Teachers, Percentage of Surveys Received, Percentage of Participation Overall for the 2018-2020 Year

Year	Total Eligible	No. of Consents	% Participating	Number of students in USD 259 and 260	% of students in USD 259 and 260	Number of Surveys requested (For K-5 only)	Number of Surveys rec'd (For K-5 only)	% of Surveys Rec'd% (For K-5 only)
Twelfth	51	30	59%	18	35%			
Eleventh	114	113	99%	71	63%			
Tenth	152	137	90%	78	51%	--	--	--
Ninth	149	144	97%	76	51%	--	--	--
Eighth	175	172	98%	109	62%	--	--	--
Seventh	204	197	97%	118	58%	--	--	--
Sixth	273	271	99%	206	75%	--	--	--
Fifth	154	150	97%	115	76%	115	115	100%
Fourth	155	150	97%	124	82%	124	124	100%
Third	150	150	100%	122	81%	122	122	100%
Second	150	150	100%	129	86%	129	129	100%
First	150	150	100%	150	100%	150	150	100%
Kindergarten	150	150	100%	150	100%	150	150	100%

Data Analyses

The data analyses for this year's report only addresses the areas in which children were measured by teacher surveys.

We analyzed the teacher surveys in which teachers were asked to compare the social skills of TOP graduates with the other children in their classes. The first six tables that follow provide the mean scores for the TOP children on the three social skill variables (appropriate behavior, competent social interactions, and emotional maturity) for each grade and then a test for statistical significance between TOP children and the other children in the class is presented in order to demonstrate that the TOP graduates' social skills from kindergarten through the fifth grades were significantly more mature than their non-TOP peers.

Teacher Surveys

The teacher survey was revised seven years ago and no longer addresses the individual child's social skills. The current survey asked the teacher to compare the TOP child to the remainder of the children in the TOP child's classroom on the three dimensions of social skills: appropriate behavior, competent social interactions, and emotional maturity. There were 12 questions that addressed the three dimensions of social skills (4 questions for each dimension). The teachers were asked to rate each TOP child in their class with a "1" if the child was in the *bottom 20% of the class*, with a "2" if the child was in *the bottom half of the class*, with a "3" if the child was at *about the middle of the class*, with a "4" if the child was *in the top half of the class*, and with a "5" if the child was in *the top 20% of the class*.

Frequency scores and comparison data. Scores were totaled and then averaged for each dimension. They were then divided by four, so there was a single score for each dimension from 1 to 5 (bottom 20% to top 20%). In that way, a statistical test was possible in which to compare the TOP graduates to the remainder of the students in their classes to determine if their social skills were statistically higher. A score of "3" would signify an average score or the "middle of the class." For simplicity, each dimension of the social skill is presented separately. Table 2a shows these results.

In order to have a better understanding of the percentage of students in each category, the four item mean scores were recoded into single categorical scores. Hence, means of 1.0 to 1.4 equaled category 1. Means of 1.5 to 2.4 equaled category 2. Means of 2.5 to 3.4 equaled category

3. Means of 3.5 to 4.4 equaled category 4. Means of 4.5 to 5.0 equaled category 5. The percentage of students in each category was than computed. Tables 2a, 3a, and 4a, provide these data.

Table 2a

Mean Scores and Statistical Significance of Appropriate Behavior Scores of TOP Graduates Compared to the Children Who Score in About the Middle of the Class in the Appropriate Behavior Category, K-5th Grades (2008-2020)

Grade	Number of Students	Mean Score	Standard Deviation	t Test	Statistical Significance
Kindergarten	1,137	3.72	.97	41.90	.000
First Grade	995	3.79	.89	44.78	.000
Second Grade	981	3.80	1.02	38.34	.000
Third Grade	883	3.91	.96	40.19	.000
Fourth Grade	817	4.07	.94	43.97	.000
Fifth Grade	872	3.97	.82	48.31	.000

Table 2b

Percentage of TOP Students in Each Appropriate Behavior Category, K-5th Grades (2018-2020)

Grade	Category 1 In the bottom 20% of the class	Category 2 In the bottom half of the class	Category 3 At about the middle of the class	Category 4 In the top half of the class	Category 5 In the top 20% of the class
Kindergarten	.8	10.1	22.9	32.2	34.0
First Grade	.8	9.0	21.5	35.7	33.0
Second Grade	1.9	8.4	20.7	33.9	35.1
Third Grade	2.0	5.1	21.4	34.7	41.8
Fourth Grade	.9	6.0	13.4	29.7	50.0
Fifth Grade	0	3.0	22.3	36.4	38.4

Appropriate behavior. The child’s ability to behave appropriately the majority of the time in a school environment is a predictor of his or her capability to adjust later in life to the rules of society (Webster-Stratton, Reid, & Hammond, 2004). Table 2a provides evidence that the majority of TOP children have learned this skill. The table also provides evidence indicating that these differences are statistically significant.

In order to have a better understanding of the percentage of TOP students exceeding the average appropriate behavior of the non-TOP students, Table 2b presents the percentage of students in each of the five levels of behavior. Comparing TOP graduates to non-TOP students, the majority of TOP graduates were perceived by their teachers to be either in the upper half or upper 20% of their classes in terms of appropriate behavior. If, indeed, this is predictive, TOP students should be contributing members of society.

Table 3a

Mean Scores and Statistical Significance of Competent Social Skills Scores of TOP Graduates Compared to the Children who Score in About the Middle of the Class in the Competent Social Skills Category, K-5th Grades (2008-2020)

Grade	Number of Students	Mean Score	Standard Deviation	t Test	Statistical Significance
Kindergarten	1,137	3.77	.96	42.78	.000
First Grade	995	3.81	.90	44.79	.000
Second Grade	981	3.87	1.00	39.79	.000
Third Grade	883	3.96	.96	40.61	.000
Fourth Grade	817	4.15	.95	44.57	.000
Fifth Grade	872	3.92	.92	42.61	.000

Table 3b

Percentage of TOP Students in Each Competent Social Skills Category, K-5th Grades (2018-2020)

Grade	Category 1 In the bottom 20% of the class	Category 2 In the bottom half of the class	Category 3 At about the middle of the class	Category 4 In the top half of the class	Category 5 In the top 20% of the class
Kindergarten	1.6	6.7	21.1	39.0	31.4
First Grade	1.8	4.5	25.8	39.4	28.5
Second Grade	1.8	7.5	23.5	27.3	39.9
Third Grade	2.0	5.1	20.4	29.6	42.8
Fourth Grade	2.9	3.0	9.6	35.6	48.9
Fifth Grade	0	6.0	22.3	34.4	37.3

Competent social interactions. Learning how to get along socially also has predictive value in terms of building relationships and establishing capabilities of social activity (Elksnin & Elksnin, 2000). The High/Scope Perry Preschool Study found their participants were socially capable as early as age six (Schweinhart, Montie, Xiang, Barnett, Belfield, & Nores, 2005).

Table 3b indicates that when comparing abilities of the TOP children to non-TOP students, all of TOP graduates for whom this survey was completed were perceived by their teachers to be either in the upper half or upper 20% of their classes in terms of competent social interactions.

Table 4a

Mean Scores and Statistical Significance of Emotional Maturity Scores of TOP Graduates Compared to the Children Who Score in About the Middle of the Class in the Emotional Maturity Category, K-5th Grades (2008-2020)

Grade	Number of Students	Mean Score	Standard Deviation	t Test	Statistical Significance
Kindergarten	1,137	3.46	1.06	35.33	.000
First Grade	995	3.55	1.07	34.96	.000
Second Grade	981	3.58	1.12	33.09	.000
Third Grade	883	3.77	1.04	35.71	.000
Fourth Grade	817	3.98	1.06	38.23	.000
Fifth Grade	872	3.75	1.03	36.21	.000

Table 4b

Percentage of TOP Students in Each Emotional Maturity Category, K-5th Grades (2018-2020)

Grade	Category 1 In the bottom 20% of the class	Category 2 In the bottom half of the class	Category 3 At about the middle of the class	Category 4 In the top half of the class	Category 5 In the top 20% of the class
Kindergarten	8.5	8.5	29.7	29.6	23.7
First Grade	1.8	19.5	17.9	35.8	25.0
Second Grade	3.7	12.3	22.6	32.1	29.3
Third Grade	2.0	11.3	20.4	24.4	41.9
Fourth Grade	3.9	5.8	14.3	28.8	47.2
Fifth Grade	1.0	12.1	20.2	30.4	36.3

Emotional maturity. The third and perhaps the most difficult social skill is that of emotional maturity. Waiting to take turns, asking “please” and saying “thank you” seem to require greater skills. Emotional maturity skills are predictive of future social abilities (Eisenberg, et al., 2007). It is the beginning of the ability to take the perspective of the other person. It helps nurture self-initiative, self-confidence, and autonomy. As shown in Table 4a, TOP students are statistically significantly more emotionally mature than their classmates.

Once again, TOP students are perceived by their teachers to be in either the upper half or upper 20% of their classes, as shown in Table 4b. There is growing substantiation that early education provides the basis for growing a healthy social being, that it manifests itself at kindergarten and continues throughout the elementary school years.

Summary

Social Skills

Learning social skills early in life is predictive of children's ability to adjust to society and be productive members of their culture (Elksnin & Elksnin, 2000; Webster-Stratton & Reid, 2004). There are now thirteen years of evidence that the TOP Early Learning Centers have provided a means for this to occur. TOP children have shown ability to behave appropriately, to establish social relationships, to engage in social interactions, and to provide evidence of emotional maturity. When comparing TOP graduates with other children in their classes, they behave significantly better than their peers; they have significantly more competent social interactions, and are more emotionally mature than their peers from kindergarten through the fifth grades. Not only does this evidence begin at kindergarten; it grows, develops, and matures, such that it is even more noticeable by the fifth grade when the students are leaving elementary school. Overall, the majority of TOP graduates were either in the upper 50% of their class or the top 20% of their class in all grades and all categories. They seem socially adept and prepared to meet the challenges of middle school.

Conclusions

After thirteen years of data collection, with the addition of a new group of kindergarten children from TOP each year, we have both a longitudinal and yearly perspective on the effect of a high-quality early education program in terms of long-term outcomes. Examining reports from previous years and the current year, we can assert with increasing confidence that, for each grade, TOP graduates' social skills are statistically greater than their classmates; that their attitudes, indicated by their attendance and repeat discipline referrals are better than their Control peers. We can also note that academically, in terms of mathematics and reading, and by GPAs for middle school students and now high school students, that TOP graduates outperform the

Control Group. Thus, there is evidence of long-term benefits to a quality early education program.

References

- Eisenberg, N., Michalik, Spinrad, T. L., Hofer, C., Kupfer, A., Valiente, C, . . . Reiser, M. (2007). The relationship of effortful control and impulsivity to children's sympathy: A longitudinal study. *Cognitive Development, 22(4)*, 544-567. Doi: 10.1016/j.cogdev.2007.08.003
- Elksnin, L., & Elksnin, N. (2000). Teaching parents to teach their children to be prosocial. *Intervention in School and Clinic, 36(1)*, 27-35.
- Hasbrook, J., & Tindal, G. A. (2006). Oral reading fluency norms: A valuable assessment tool for reading teachers. *The Reading Teacher, 59(7)*, 636-644.
- Hosp, M. K., Hosp, J. I., & Howell, K. W. (2007). *The ABC's of CBM: A practical guide to curriculum-based measurement*. New York: Guilford Press.
- Schweinhart, L. J., Montie, J., Xiang, Z., Barnett, S. W., Belfield, C. R., & Nores, M. (2005). *Lifetime effects: The High/Scope Perry Preschool study through age 40*. Ypsilanti, MI: High/Scope Press.
- Webster-Stratton, C., Reid, M. J., & Hammond, M. (2004). Treating children with early-onset conduct problems: Intervention outcomes for parent, child, and teacher training. *Journal of Clinical Child and Adolescent Psychology, 33(1)*, 105-124.