



## **TOP Early Learning Centers Longitudinal Research Project Final Report 2008-2015 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 eight years for the longitudinal research project that will follow TOP (The Opportunity Project) Early Learning Center 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. To measure academic standing, we collected State standardized test scores, Grade Point Averages (GPAs) for the middle school students, and special education placements were collected for all grades. Attitudinal data were collected on attendance and repeat discipline referrals for kindergarten through seventh grades.

### **Social Skills Survey Data Analysis**

Social skills were measured on three dimensions: behavior, social interactions, and emotional maturity. On average TOP graduates' behavior, as well as their social interactions, ranked in the top 20% of their class. Their emotional maturity placed them among the top 30% of their classmates. This indicates they are socially adept and prepared to meet the challenges of middle school.

### **Academics**

State standardized test results for math and reading are presented for the 2014-2015 school year. The state administered new assessments starting in 2013; these assessments are more rigorous and complex, requiring more critical thinking. Even with new, difficult tests, TOP graduates continued to score higher than their Non-TOP peers. TOP students were 32% less likely to be below grade level in math and 22% less likely to score below grade level in reading than their Control Group peers. In addition, TOP students were 27% more likely to perform at Level 3 in math and 11% more likely to reach Level 3 in reading than the Control Group. Level 3 indicates students performing at grade level and exhibiting a high level of skill consistent with rigorous standards. GPAs were also collected for the middle school students; TOP graduates consistently indicated at least a 3.0 GPA whereas the Control Group failed to meet the 3.0 level for either of the middle school grades. A third academic measure was special education placement. The differences between the TOP Group and the Control Group students increased from kindergarten, where TOP graduates were 13% less likely than the Control Group to be placed in special education to seventh grade in which TOP graduates were 69% less likely than their Control Group peers to be in special education.

### **Attitudinal Data**

TOP children's attendance was better for each year, from kindergarten to seventh grade (where they had 17% fewer days of absence than the Control Group). This percentage difference stayed in double digits, except for two years (second and third grades). For discipline, there was a consistent pattern indicating that TOP graduates had fewer repeat discipline referrals each year; by later elementary and middle school, the gap between TOP kids and the Control Group widened, providing evidence that the older TOP graduates' attitudes toward school improved whereas Control Group students' attitudes became more disenfranchised. For the middle school students, suspensions were similar for both groups in the sixth grade whereas in the seventh grade, the TOP graduates had fewer suspensions than their Control peers.

## FINAL REPORT, 2008-2015

**Linda Bakken, Professor Emeritus  
Educational Psychology, Wichita State University**

The TOP Longitudinal Research Project has completed its eighth year and this year we collected data from students in kindergarten through the seventh grades in the Derby (USD 260) and Wichita (USD 259) school systems in Kansas. For the past year, the following information was collected: for all grades - attendance, special education placements, repeat discipline referrals, and grade retentions. In addition, 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. Academically, we collected standardized test information from the third through seventh grades in reading and mathematics (schools administer standardized state assessments annually starting at the third grade). Beginning in middle school, social skills surveys for students were no longer gathered from the teachers; rather, we relied on the attitudinal information for grades six and seven as well as grade-point averages and suspensions.

There were 1,214 students for which parents had signed consent forms (a 92% participant rate) agreeing that their children could participate in the study. We were able to locate 876 of these children in the two school systems. 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 during the 2014-2015 school year, and the response rate for the social skills survey for the kindergarten through fifth grades. Both school systems had a 100% response rate for their teachers.

**Table 1**

**Grade of TOP Child, Number of Consent Forms, Percent of Children Participating in the Longitudinal Study, Number of Students Located in Derby and Wichita Public Schools, Number of Surveys Received from Teachers, Percent of Surveys Received, Percent of Participation Overall for the 2014-2015 Year**

Year	Total Eligible	No. of Consents	% Participating	Number Students in USD 259 and 260	% Stud USD 259 & 260 <sup>1</sup>	Number of Surveys Requested	Number of Surveys Rec'd	% Surveys Rec'd <sup>2</sup>	% Surveys Overall <sup>3</sup>
Seventh	51	30	59%	17	57%	--	--	--	--
Sixth	114	113	99%	70	62%	--	--	--	--
Fifth	152	137	90%	82	60%	82	82	100%	60%
Fourth	149	144	97%	87	60%	87	87	100%	60%
Third	175	172	98%	134	78%	134	134	100%	78%
Second	204	197	97%	144	73%	144	144	100%	73%
First	273	271	99%	211	78%	211	211	100%	78%
Kinder	154	150	97%	131	87%	131	131	100%	87%
Totals	1272	1214	95%	876	72%	789	789	100%	74%

<sup>1</sup>Percent of students with consent forms who are found in the Wichita and Derby school systems

<sup>2</sup>Percent of surveys received out of number sent

<sup>3</sup>Percent of surveys received out of total children with consent forms

## Data Analyses

The Data analyses addresses three areas in which children were either measured or data were gathered from school records.

1. 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 three tables 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.
2. Second, the following analyses are provided on academic information:
  - a. Scores on reading and math standardized tests for grades three through seven are presented in terms of students' performance ratings (Level 1, a student is not performing consistently at grade level; Level 2, a student is performing on grade level; Level 3, a student performs on grade level and exhibits a high level of skill consistent with rigorous standards; Level 4, a student exceeds grade level); these new ratings are based on the new standardized state assessments. Figures 1 through 3 present the findings.
  - b. Cumulative Grade Point Averages (GPAs) for middle school students (sixth and seventh grades). Table 4 presents these data.
  - c. Special education placement for all grades are presented for the Wichita and Derby school districts separately; then the two districts are combined. Figures 4 and 5 depict the findings.
3. Analyses of attitudes were provided with the following information:
  - a. Attendance was provided in terms of the percent of time students attended school. One table presents these findings.
  - b. Discipline referrals were presented for those children who had repeated referrals to the principal's office. One table indicates this analysis.
  - c. School suspensions were presented for the middle school students (sixth and seventh grades). One table reports the results.

The first analysis was conducted with TOP participants who were compared with the remainder of the children in their class. The second and third analyses were conducted with a control sample provided by the Derby and Wichita school districts.

### Teacher Surveys

The teacher surveys were revised two years ago and no longer address 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*. We have two years of data for each grade from kindergarten through fifth grades.

**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 (singling bottom 20% to top 20%). In that way, a statistical test comparison 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.” It may be easier to discuss each dimension of the social skill separately.

**Table 2**

**Mean Scores and Statistical Significance of Appropriate Behavior Scores of TOP Graduates Compared to Class Average Appropriate Behavior Scores of Non-TOP Children in Kindergarten through the Fifth Grades**

Grade	Number of Students	Mean Score	Standard Deviation	tTest	Statistical Significance
Kindergarten	351	3.91	.92	18.47	.000
First Grade	359	3.93	.95	18.57	.000
Second Grade	282	3.88	1.04	14.23	.000
Third Grade	230	3.94	.95	14.94	.000
Fourth Grade	175	3.86	.97	11.73	.000
Fifth Grade	162	3.96	.95	12.75	.000

**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 2 provides evidence that the majority of TOP graduates have learned this skill. Comparing TOP students to non-TOP students, teachers perceived TOP children, on average, to be in the top 20% of the class in terms of appropriate behavior. The table also provides evidence, indicating that these differences are statistically significant. If, indeed, this is predictive, TOP graduates should be contributing members of society later in life.

**Table 3**

**Mean Scores and Statistical Significance of Competent Social Skills Scores of TOP Graduates Compared to Class Average Competent Social Skill Scores of Non-TOP Children in Kindergarten through Fifth Grades**

Grade	Number of Students	Mean Score	Standard Deviation	tTest	Statistical Significance
Kindergarten	351	3.85	.98	16.36	.000
First Grade	359	3.93	.95	18.65	.000
Second Grade	282	3.89	1.00	14.86	.000
Third Grade	230	3.94	.94	15.18	.000
Fourth Grade	175	3.88	1.00	11.56	.000
Fifth Grade	162	3.96	.94	13.07	.000

**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, and Nores, 2005). Table 3 indicates the abilities of the TOP graduates in their social interactions, their mean score again indicating, that on average, they were in the top 20% of the class in terms of competent social interactions. And, once again, the results are highly statistically significant, suggesting that TOP graduates have social promise as tomorrow's citizens.

**Table 4**

**Mean Scores and Statistical Significance of Emotional Maturity Scores of TOP Graduates Compared to Class Average Emotional Maturity Scores of Non-TOP Children in Kindergarten through the Fifth Grades**

Grade	Number of Students	Mean Score	Standard Deviation	tTest	Statistical Significance
Kindergarten	351	3.68	1.08	11.75	.000
First Grade	359	3.84	1.03	15.35	.000
Second Grade	282	3.78	1.09	12.07	.000
Third Grade	230	3.87	1.01	13.01	.000
Fourth Grade	175	3.73	1.04	9.25	.000
Fifth Grade	162	3.88	.98	11.40	.000

**Emotional maturity.** The third and perhaps the most difficult social skill to develop is that of emotional maturity. Waiting to take turns, asking "please" and saying "thank you" seem to require greater skills. Although the scores for emotional maturity are slightly lower than they are for the other two dimensions, these 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. TOP graduates still were statistically significantly more emotionally mature than their classmates, from kindergarten through the fifth grades. There is growing substantiation that early education provides the basis for growing a healthy social being and that it manifests itself at kindergarten and continues throughout the elementary school years. On average, TOP graduates were in the top 30% of their classrooms in terms of emotional maturity.

**Academic Information**

Academics are presented as reading and math performance indicators from state assessments beginning at the third grade. Also included in this section are the cumulative grade point averages (GPAs) for the middle school students (sixth and seventh grades). Special education is discussed as a subset of academics because it is generally considered part of the academic curriculum. Both districts provided a Control Group with which we could compare the TOP graduates in both academic subjects and for special education placement.

The state assessments were changed in the 2013-2014 school year; thus, data from the standardized state assessments were not available for the 2014 report. The developers of the new assessments indicated that these new assessments are the first measures that focus on the Kansas college and career-ready standards. These are rigorous standards adopted by the Kansas State Department of Education in 2010. John Allison, Superintendent of USD 259 strongly posited that the new assessments should not be compared to the previous measurements. Thus, we might

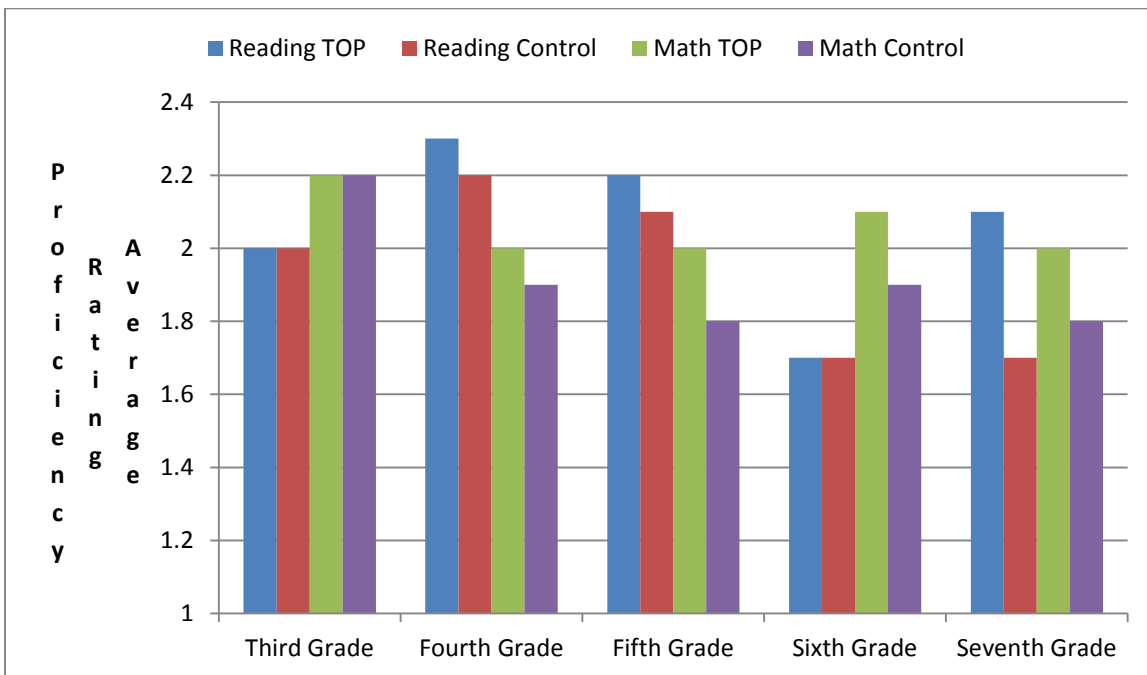
need to start anew with comparisons. Administrators also indicated that, because these new tests are more complex and difficult, requiring critical thinking that was not assessed in the past, this first year’s testing would result in lower scores and lower performance ratings.

**Standardized Test Scores.** Starting with the third grade, schools administer state tests in several disciplines. For this report, we are concerned with test scores for reading and mathematics for the 2014-2015 school year. We have test scores for the third, fourth, fifth, sixth, and seventh grades. The new state assessments rely primarily on a level of performance (Level 1, 2, 3, or 4) relative to grade level peers in the same content area (Reading or Math). According to the information from the state assessment criteria, the four performance levels are: Level 1, a student is not performing consistently at grade level; Level 2, a student is performing on grade level; Level 3, a student performs on grade level and exhibits a high level of skill consistent with rigorous standards; Level 4, a student exceeds grade level expectations.

Neither group, in any grade, received higher than a 2.3 average performance rating, and some groups (notably the sixth grade) achieved less than a 2.0 average. It is evident, however that, even with this lower scoring, the TOP graduates scored higher or equal to their Control peers. Although at the third grade, both the TOP and the Control Groups performed similarly, the other grades indicated differences between the two groups in both math and reading.

**Figure 1**

**Performance Ratings for TOP and Control Groups in Derby and Wichita for Third, Fourth, Fifth, Sixth, and Seventh Grade Students from Reading and Math Standardized Test Scores for 2014-2015**

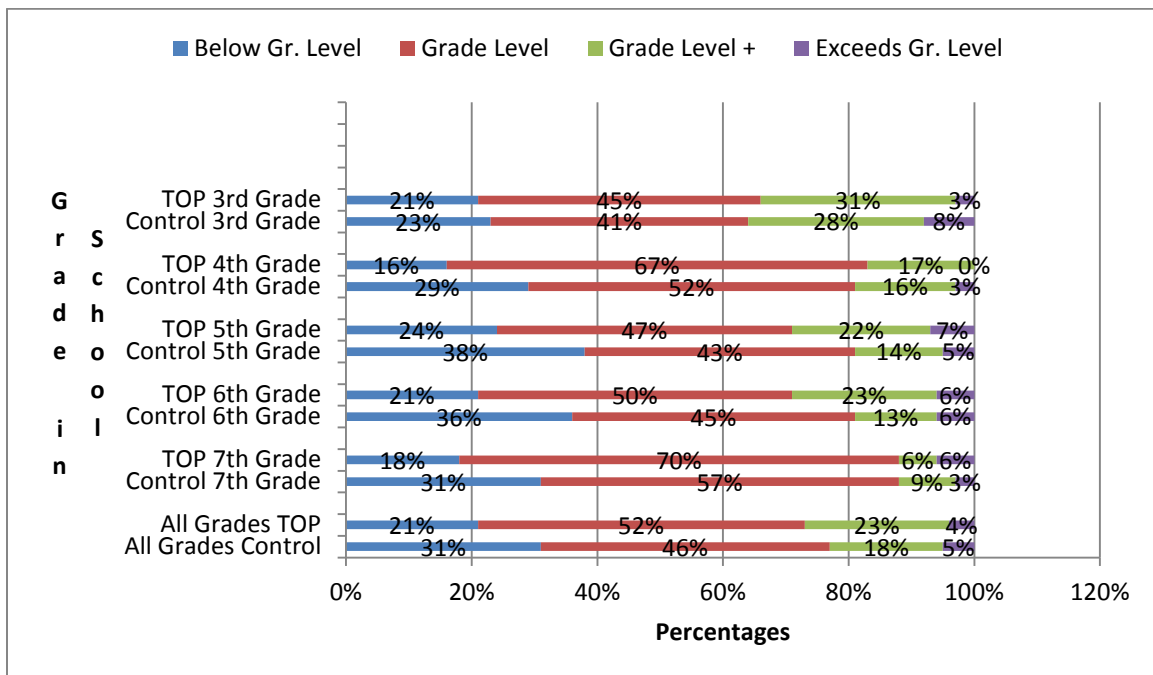


Another means of addressing the data is to look at the range of the performance scores among the different grades for each group in order to determine if there is a difference in those who don’t perform at grade level (Level 1),

those who achieve the grade standard (Level 2), those who perform at grade level with a high level of skill (Level 3; marked in the figure with “Grade Level +”), and those who exceed grade level (Level 4). Figure 2 presents these data for Math and Figure 3 depicts the data for Reading.

**Figure 2**

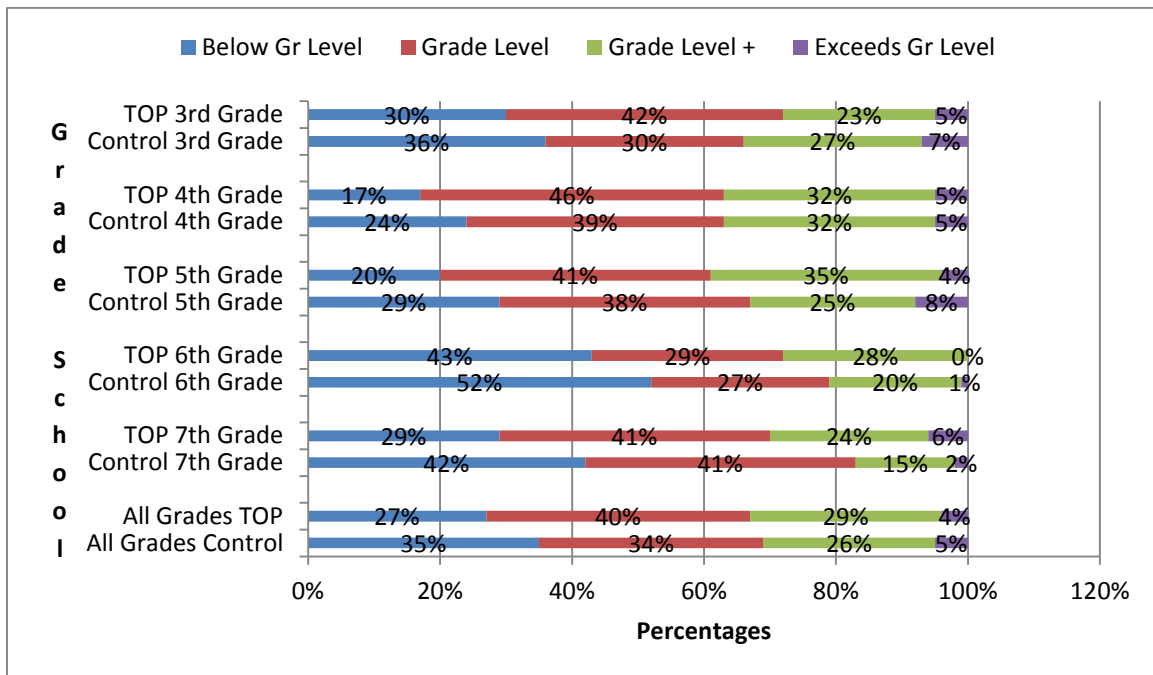
**Graph Comparing Performance Ratings (in percentages) on State Standardized Tests in Mathematics for Third through Seventh Grade TOP and Control Groups in the Wichita and Derby School Districts for 2014-2015**



*Math Standardized Test Scores.* Figure 2 provides a means of determining just what percentage of students perform at each performance level in math for both the TOP and Control samples of third, fourth, fifth, sixth, and seventh grade students. The TOP graduates, with the exception of Level 4 performance ratings, have higher or equal ratings on all performance levels. In looking at math scores, for all grades, TOP graduates were more likely to achieve grade level than their Control Group peers. TOP graduates also had a greater percentage of Level 3 (Grade Level + on the figure) ratings with the exception of the seventh grade. Although both groups had the majority of their students in the Level 2 range, for most grades testing indicates that TOP students more often achieve Level 3 (grade level with high skills; Level +). Several grades of TOP graduates had more than 20% of their students at this level. When all five grades are combined, the findings are even more pronounced: TOP graduates are 32% less likely to score below grade level in math than the Control Group. Further, TOP graduates are 27% more likely than the Control Group to reach level 3, in which students are at grade level and on track for college or career readiness in math.

Figure 3

**Graph Comparing Performance Ratings (in percentages) on State Standardized Tests in Reading for Third, Fourth, Fifth, Sixth, and Seventh Grade TOP and Control Groups in the Wichita and Derby School Districts for 2014-2015**



*Reading Standardized Test Scores.* A similar means can be utilized to compare the standardized reading test performance percentages provided in Figure 3. The TOP Group, once again, had lower percentages of students at Level 1 (below grade level) in reading, the TOP graduates (by fifth grade) had a greater percentage of students performing at both Level 2 and Level 3 (Level 2 + on the graph). Both sixth grade groups (TOP and Control) have higher than 40% of the students not achieving grade level; however, whereas the number of TOP graduates was higher at this level, the Control sample had an even higher percentage (the sixth grade Control Group had more than 50% of their students scoring below grade level). By seventh grade, the TOP students once again performed similar to the earlier grades (considerably fewer TOP graduates failed to achieve grade level). It is a major transition to move from a single classroom to a middle-school environment; that may be the reason that sixth grade students do not perform as well. By the seventh grade, they are more comfortable with their environment and are performing as they had in elementary school. Once again, the Control Group had a higher percentage of students at Level 4. When all grades are combined, the reading tests indicate TOP graduates are 22% less likely to score below grade level in reading than the Control Group. Further, TOP graduates are 11% more likely than the Control Group to reach level 3, in which students are at grade level and on track for college or career readiness in reading.

**Cumulative GPA scores.** Academic cumulative grade point averages (GPAs) were also gathered from the two school districts for the sixth and seventh grade TOP and Control Group students. Table 4 reports these GPAs for each district and for the districts combined.



**Table 4**

**Cumulative Grade Point Averages (GPA) for Sixth and Seventh Grade Students for Wichita and Derby TOP and Control Group Students for the 2014-2015 School Year**

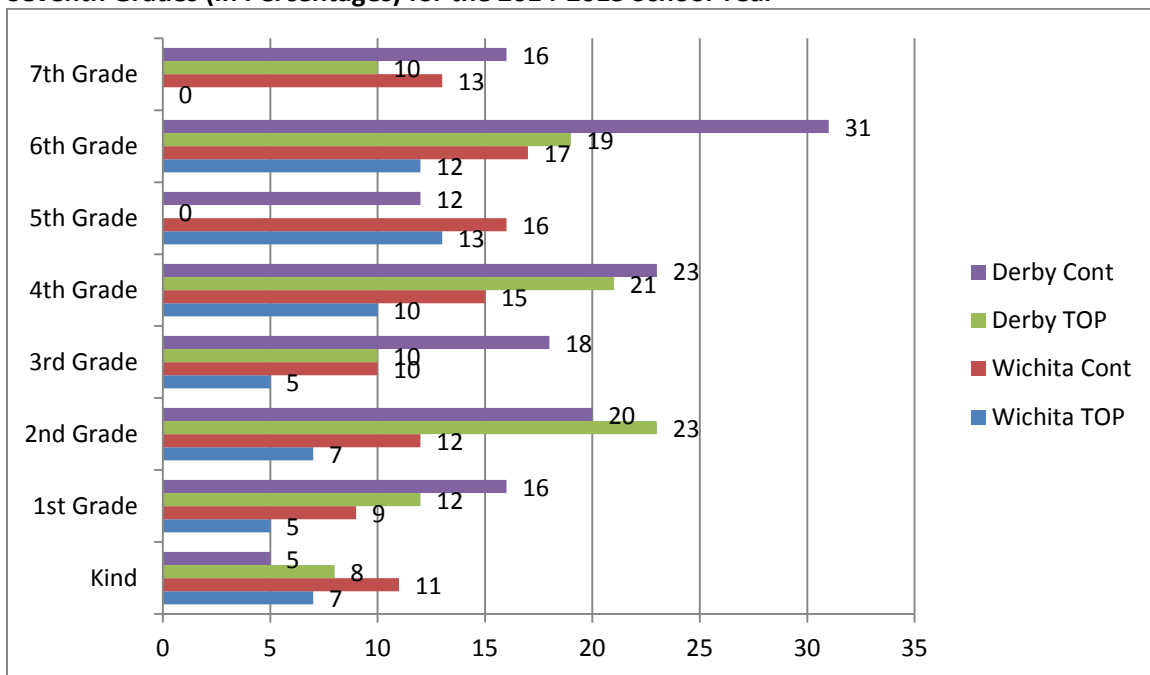
Grade	Wichita				Derby				Combined			
	TOP	No.	Control	No.	TOP	No.	Control	No.	TOP	No.	Control	No.
Sixth	3.16	48	2.91	208	2.96	22	3.21	52	3.10	70	2.97	260
Seventh	3.26	7	2.87	36	2.93	10	2.71	28	3.07	17	2.80	64

When observing the Wichita district, it is interesting to note that, for both the middle school grades, the TOP graduates, on average, had a 3.0 GPA or higher whereas their Control peers did not achieve the 3.0 GPA average for either year. Derby TOP graduates, however, did not achieve a 3.0 GPA for either year although in the seventh grade the TOP students' average was higher than their Control peers. When the two districts were combined, however, TOP graduates had an average 3.0 GPA for both middle school years whereas the Control Group, on average, had less than a 3.0 GPA for both years.

**Special education placement.** Because the sample sizes are so different between the TOP and Control Groups, percentages are used to report on special education placements. Figure 4 indicates these rates for each school system separately. For the TOP graduates, almost all the special education placements were for speech and/or language problems. For the Control Groups, there was considerable variation in placement in the special education categories.

**Figure 4**

**Special Education Placements for Wichita and Derby TOP and Control Group Students from Kindergarten through Seventh Grades (in Percentages) for the 2014-2015 School Year**



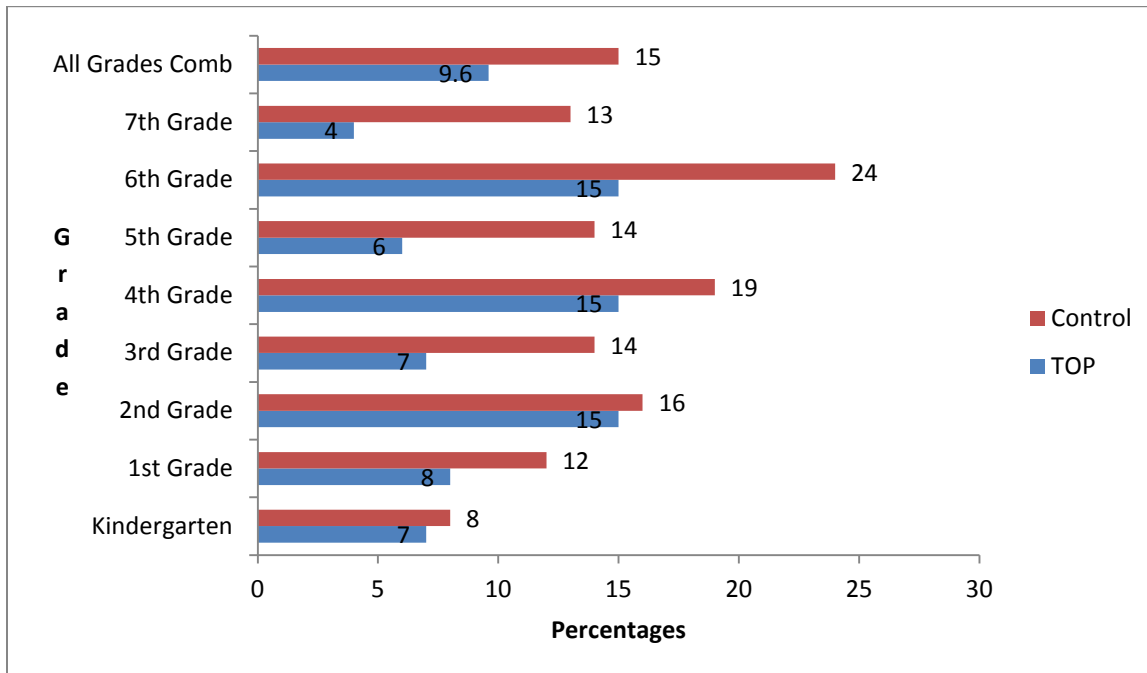
For Wichita, the TOP graduates had fewer special education placements at all grades than their Control Group peers; for the Derby TOP graduates, kindergarten and second grade were the only grades in which TOP graduates had a

higher special education placement rate than their Control peers. By the seventh grade, there were no TOP graduates remaining in special education in Wichita; for Derby, those students remaining in special education were mostly for learning disabilities (the students had been in special education for several years).

Although it appears that special education placements grow as students age, what really happens is that the numbers of TOP graduates declines such that the number of TOP graduates who are placed in special education actually starts to decline after the second grade.

**Figure 5**

**Special Education Placements for the Combined Districts for TOP and Control Groups from Kindergarten through Seventh Grades (in Percentages) for the 2014-2015 School Year**



When the two districts are combined, the percentages become more noticeable because the numbers are larger. Notice that for each year, TOP graduates had a lower percentage of special education placements than their Control Group peers. Also note that the differences between the TOP graduates and the Control Group students increased as the students aged, such that by seventh grade, there was a 9% difference between TOP and Control students (or, TOP graduates are 69% less likely to be in special education than their Control Group peers) in terms of special education placement. Figure 5 indicates these percentages. When the percentages for all grades are combined, TOP graduates are 36% less likely to be referred to special education than the Control Group.

**Attitudinal Information**

We operationally defined attendance and discipline as attitude variables because earlier longitudinal studies (e.g., Schweinhart et al., 2005) indicated that attitudes toward school may be an important variable in addressing differences between groups of this nature. Thus, we collected attendance rates and discipline referrals from the schools to determine students’ attitudes toward schools.

The Derby and Wichita school districts provided the TOP Longitudinal Study with a control sample matched to the TOP children in terms of age, gender, ethnicity, and socioeconomic status (SES), with which to compare the TOP children. Thus, the data reported on TOP graduates who attended schools in those two districts from kindergarten through the seventh grades, compared them with the matched Control Groups. The information is presented separately for each district, and then combined to provide an overall comparison of the TOP and the Control Groups.

**School attendance.** The first few years of reports indicated few differences in attendance between the TOP graduates and their Control peers. However, the last three years have indicated interesting findings: In 2013, we found that, although there continued to be few differences between kindergarten, first and second grade children in their school attendance (whether or not they were TOP graduates), as they became older, there was a change. In other words, as the TOP children got older their days of absenteeism decrease. They attended school more often (from a 1% difference in kindergarten to a 2.3% difference in seventh grade) than their non-TOP peers. In 2014, we found two interesting factors: First, when the data were aggregated for both school districts, we found that there were fewer absences each year until the students reached middle school. Second, when the school districts were combined, TOP graduates had noticeably fewer absences on average than their Control Group peers each year, from kindergarten through the middle school years. For the current year (2015), again two interesting findings are found: First, from kindergarten through second grades, TOP graduates had a higher attendance rating than their Control Group peers; however, for third and fourth grades, TOP graduates had a lower attendance rating than the Control Groups for those two grades. Then, for the sixth and seventh grades, TOP graduates again had a higher attendance rating than their Control Group cohorts. In fact, for the middle school grades, TOP graduates had a 2% higher attendance rating. Table 6 provides the data for both the Wichita and Derby schools separately and then the two districts combined.

**Table 6**

**Average Attendance Rates (in percentages) for Wichita and Derby TOP and Control Group Students from Kindergarten through Seventh Grades for the 2014-2015 School Year**

Grade	Wichita				Derby				Combined			
	TOP		Control		TOP		Control		TOP		Control	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Kindergarten	106	95.6	699	94.9	26	96.7	86	95.3	132	95.8	785	94.9
First Grade	155	95.7	654	94.5	50	95.1	89	95.6	205	95.5	743	94.6
Second Grade	106	96.4	380	95.2	31	96.1	30	94.8	137	96.3	410	95.2
Third Grade	92	95.8	365	96.0	39	95.8	33	96.3	131	95.8	398	96.0
Fourth Grade	57	95.3	294	95.7	29	95.7	52	95.3	86	95.4	346	95.6
Fifth Grade	59	95.6	270	95.6	23	95.8	49	95.2	82	95.7	319	95.5
Sixth Grade	48	96.7	209	94.0	22	94.2	52	92.9	70	95.8	261	93.8
Seventh Grade	7	94.4	37	92.5	10	95.2	28	92.7	17	94.9	65	92.6
Total	630	95.7	2908	94.8	230	95.6	419	94.8	860	95.7	3327	94.8

**Discipline Referrals.** We also asked about discipline -- if a child was referred to the office because of behavior problems and if there were repeated discipline referrals for the same child. Generally, if a child is sent to the office one

time, there may be many reasons besides misbehavior. Therefore, we decided that we would only count repeat office visits as a means disciplines referrals. In Wichita, the TOP graduates had fewer repeat office referrals for almost every year (the exception were first and third grades); in fact, by middle school, the differences in the repeat discipline referrals had increased substantially. For Derby, it was difficult to find a pattern, and it was only when students were at the fifth grade level that there were substantial differences between TOP and Control Group students. Beginning at later elementary and continuing through the middle school years, TOP graduates in Derby had consistently fewer repeat discipline referrals. When the two districts are combined, there is a consistent pattern indicating that TOP graduates had fewer repeat discipline referrals each year; once again, by later elementary and middle school, the gap between TOP and the Control Group widened. Because the groups differ substantially in size, the numbers are reported in percentages. Table 7 provides the percentages for the Wichita and Derby students separately, and then the two groups are combined for each grade.

**Table 7**

**Repeat Discipline Referrals Rates (in Percentages) for TOP and Control Group Students from Kindergarten through Seventh Grade for Wichita and Derby for the 2014-2015 School Year**

Grade	Wichita		Derby		Combined	
	TOP	Control	TOP	Control	TOP	Control
Kindergarten	4	5	4	3	4	4.8
First Grade	6	6	0	6	4.5	6
Second Grade	3	6	6	3	3.7	5.8
Third Grade	5	4	0	3	3.5	3.9
Fourth Grade	5	8	7	2	5.7	7.1
Fifth Grade	2	7	9	6	4	6.8
Sixth Grade	10	15	18	15	12.5	15
Seventh Grade	0	11	20	32	11.8	20

**School suspensions.** Because we no longer sought survey data from teachers for students when they left the fifth grade, we asked for some additional information about students as they advanced to middle school. We asked for disciplinary information regarding suspensions and expulsions of the sixth and seventh grade students. Neither Derby nor Wichita reported any expulsions for the two grades. Table 8 provides the suspension percentages for both school districts.

**Table 8**

**Suspension Rates (in Percentages) for Sixth and Seventh Grade Students for Wichita and Derby TOP and Control Group Students for the 2013-2014 School Year**

Grade	Wichita		Derby		Combined	
	TOP	Control	TOP	Control	TOP	Control
Sixth	19%	20%	14%	4%	17.4%	16.8%
Seventh	14%	30%	20%	25%	17.5%	27.8%

Looking at the combined scores for the two districts, it appears that in the sixth grade, the suspension rates were similar for both the TOP and Control Group students. In seventh grade, the Control Group had a substantially higher rate of suspensions than the TOP graduates. It is too early to generalize from these data because the seventh grade has only 17 students.

## Summary

### Social Skills

Learning social skills early in life are 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 eight 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, their behavior is in the top 20% of the classroom, their social interactions also ranks in the top 20%, and their emotional maturity places them among the top 30% of their classmates. They seem socially adept and prepared to meet the challenges of middle school.

### Academics

**Standardized Test Scores.** Starting at the third grade, state standardized tests are administered in mathematics and reading. TOP graduates' scores either equaled those of the Control Group or, in most grades, a greater percentage of TOP students performed at higher levels than their non-TOP peers. What was most notable was the fact that a higher percentage of TOP graduates achieved grade level in all grades and had a higher percentage of Level 2 and Level 3 scores than the Control students. These results held true for both math and reading. Because it is the first year with a new and more rigorous assessment, we will need to determine what will happen after some more time and experience with this new type of measure becomes more recognizable and comfortable with students.

**Cumulative grade point averages (GPAs).** In addition to the standardized test scores, TOP students also indicated higher GPAs for both the sixth and seventh grades. They average over a 3.0 average for both years whereas their Control counterparts fail to reach the 3.0 average for either grade.

**Special education placement.** First, each year, TOP graduates had a lower percentage of special education placements than their Control Group peers. Second, the differences between the TOP graduates and the Control Group students increased as the students age, such that by seventh grade, TOP Graduates are 69% less likely to be in special education than their Control Group peers.

### Attitudes

In terms of attendance, TOP children's attendance was better for each year, from kindergarten (they have 18% fewer days of absence than their Control peers) to seventh grade (they have 17% fewer days of absence than the

Control seventh graders). This percentage difference stays in double digits except for two years (second grade: 4% and third grade: 9%). Schweinhart, et al. (2005) indicated from their longitudinal study of the High/Scope Perry Preschool Study that one factor found early in their target group was the favorable attitude toward school. It seems as if our TOP group has found just that attitude toward school.

In addition, when addressing discipline problems, repeat discipline referrals indicate that TOP graduates have an increasingly improved pattern, providing evidence that the older TOP graduates' attitudes toward school improved whereas Control Group students' attitudes became more disenfranchised. For the middle school students, we also collected data on suspensions; although the pattern for both TOP and Control students is similar in sixth grade, by the seventh grade Control students have a higher rate of suspensions than the TOP Group.

### **Conclusions**

After eight 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. 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, repeat discipline referrals, and suspensions are greater than their Control peers. We can also note that academically, in terms of mathematics and reading, and by GPAs for middle school students, that TOP graduates outperform the Control Group. Thus, at least through the seventh grade, there are 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.