

## **TOP Early Learning Centers Longitudinal Research Project Report 2008-2024 SUMMARY**

### **TOP Data Collection**

To answer whether high-quality, early education improves life outcomes for children living in poverty, we have collected data for sixteen 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 executive function skills in the areas of Academic, Social, and Emotional Behaviors of TOP graduates (from kindergarten through fifth grades) to Control Group students. To measure academic standing, we collected state standardized test scores from third through eighth and tenth grades, grade point averages (GPAs), and discipline data for middle and high school students. Special education placements were collected for all grades. Attitudinal data on attendance and repeat discipline referrals for kindergarten through twelfth grades were collected.

### **Executive Function Skills Survey Data Analysis**

Executive function skills were measured on three dimensions: Academic, Social, and Emotional Behaviors. One hundred percent of TOP graduates were at “Some or Low Risk” in all of their classes on all three measures (meaning TOP graduates did not display conduct that indicated they were at risk for challenging behaviors in school. Higher scores are indicative of better student behavior and more appropriate functioning). Furthermore, more than 76% of TOP graduates were rated as “Low Risk” across all three measures.

## **Academics**

State standardized test (also known as Kansas Assessment Program or KAP) results for math and reading are presented for the 2023-2024 school year. TOP graduates' performances were compared to a demographically matched Control Group for grades three through eight and grade ten (ninth, eleventh, and twelfth graders do not take state assessments). Study results indicate that TOP graduates were less likely to perform "Below Grade Level" in all cases. Additionally, of seven of the seven grade levels state assessments are administered to, TOP graduates were more likely to be "At Grade Level and Progressing Toward College Readiness" than their Control Group peers.

Grade point averages were collected for middle and high school students. TOP graduates' scores were compared to a demographically matched Control Group. In seven of the seven grade levels reported, TOP graduates had significantly higher GPAs than the Control Group.

A third academic measure for this study is special education placement. TOP graduates were 23.8% less likely than the demographically matched Control Group to be placed in special education in kindergarten through twelfth grades.

## **Attitudinal Data**

TOP students' attendance was better for each year (compared to the Control Group students) from kindergarten through twelfth grade. For discipline, there was a consistent pattern indicating that TOP graduates often had fewer repeat discipline referrals each year. The overall trend for TOP graduates indicated a slow increase in discipline referral rates that peaked by seventh grade. The TOP graduates' were 13.5% less likely to have repeat discipline referrals compared to the Control Group. The gap between TOP graduates and the Control Group was evident even in kindergarten, providing evidence that TOP graduates' attitudes toward school

were more positive than those of the Control Group students. Additionally, TOP graduates experienced lower suspension rates than the Control Group in sixth through twelfth grades.

## **FINAL REPORT, 2008-2024**

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The TOP Longitudinal Research Project has completed its sixteenth year, and this year we collected data from students in kindergarten through the twelfth grades in the Wichita (USD 259) school system in Kansas. For the 2023-2024 school year, the following information was collected: for all grades - attendance, special education placements, repeat discipline referrals, and grade retentions. In addition, teachers of TOP graduates and Control Group students in kindergarten through fifth completed a measure of academic, social, and emotional risk behaviors. Academically, we collected standardized test information from the third through eighth grades in reading and mathematics (schools administer standardized state assessments annually starting at the third grade). We also collected reading and math state assessment data for tenth-grade students. State reading and math assessments are not given in ninth, eleventh, or twelfth grade. Grade point averages and suspensions were also collected for students in sixth through twelfth grades.

The Wichita Public School District provided the TOP Longitudinal Study with a control sample matched to the TOP children in terms of age, gender, ethnicity, and socioeconomic status to compare the TOP children for attitudinal, GPA, and special education placement. Thus, the demographic data is reported on TOP students who attended schools in the district from kindergarten through the twelfth grades, comparing them with the matched Control Group.

There were 1,730 TOP students in the 2023-2024 school year 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. 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.

We were able to locate 1,098 of the 1,730 children in the USD 259 School District during the 2023-2024 school year. Table 1 provides the details of the number of students who were included in the study, the number of students we were able to locate, and the response rate for the SAEBRS (Social, Academic, and Emotional Behavior Risk Screener) executive function skills survey for the kindergarten through fifth grades. We had a 100% response rate from their teachers.

**Table 1: Grade of TOP Child, Number of Eligible Participants, Percentage of Children Participating in the Longitudinal Study, Number of Students Located, Number of Surveys Received from Teachers, Percentage of Surveys Received, Percentage of Participation Overall (2023-2024)**

Grade	Total Of Eligible Participants	No. of Students Located 259	% of students located 259	Number of Surveys requested (For K-5 only) 259	Number of Surveys rec'd (For K-5 only) 259	% of Surveys Rec'd% (For K-5 only) 259
Twelfth	109	59	54%	--	--	--
Eleventh	117	79	68%	--	--	--
Tenth	179	122	68%	--	--	--
Ninth	114	72	63%	--	--	--
Eighth	125	78	62%	--	--	--
Seventh	121	82	68%	--	--	--
Sixth	128	87	67%	--	--	--
Fifth	150	92	61%	92	92	100%
Fourth	150	95	63%	95	95	100%
Third	87	55	63%	55	55	100%
Second	150	85	56%	85	85	100%
First	150	91	60%	91	91	100%
Kindergarten	150	101	67%	101	101	100%

### Data Analyses

The data analyses address 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 rate the executive function skills of TOP graduates and Control Group students in kindergarten through fifth grades. The first six tables that follow provide the mean scores for the TOP children on the three variables (Social, Academic, and Emotional Behaviors) for each grade and then a test for statistical significance between TOP children and the Control

Group students in order to demonstrate that the TOP graduates' executive function 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 eighth and tenth grade are presented in terms of students' performance ratings (Level 1, a student is "Below Grade Level"; Level 2, a student is "At grade Level, But Not On Track For College Or Career Readiness;" Level 3, a student is "At Grade Level And On Track For College Or Career Readiness;" Level 4, a student exceeds grade level expectations and is on track for college or the workplace.) Figures 1 through 4 present the 2023-2024 school year findings.
  - b. Cumulative grade point averages for sixth through twelfth grades. Table 6 presents these data.
  - c. Special education placement for all grades is presented. Figure 5 depicts the findings.
3. Analyses of attitudes are provided with the following information:
  - a. Attendance is provided in terms of the percentage of time students attended school. Table 7 presents these data.
  - b. Discipline referrals are presented for those children who had repeated referrals to the principal's office. Table 8 indicates this analysis.
  - c. School suspensions are presented for the sixth through twelfth grades. Table 9 reports the results. The first analysis was conducted with TOP graduates who

were compared to students in the Control Group. The second and third analyses were conducted with a Control Sample provided by the Wichita School District.

This report highlights outcomes in three primary areas: Executive Function Skills (i.e., social, academic, and emotional behavior), Academics (i.e., state Assessment data, grades, and special education placement), and Attitudes (including attendance and discipline data).

## Executive Function Skills

### Teacher Surveys

K-5 teachers administered a measure of executive function called SAEBRS (Social, Academic, and Emotional Behavior Risk Screener). The survey comprises 19 items, each relating to a broad factor (General Behavior) and three narrow factors: Social Behavior, Academic Behavior, and Emotional Behavior. Behaviors that are rated within each category are explained below.

Category	Number of Items	Description of behaviors
Social	6	Arguing Cooperation with peers Temper outbursts Disruptive behavior Polite and socially appropriate Impulsiveness
Academic	6	Interest in academic topics Preparedness for instruction Production of acceptable work Difficulty working independently Distractedness Academic engagement
Emotional	7	Sadness Fearfulness Adaptable to change Positive attitude Worry Difficulty rebounding from setbacks Withdrawal

The teachers completed the SAEBRS for individual TOP graduates and Control Group Students with whom they had a history of interactions. Ratings correspond to the frequency with which the teacher has observed various maladaptive and adaptive behaviors in the previous month (Never, Sometimes, Often, Almost Always). A student's overall performance on each SAEBRS scale is reported as a sum of item scores within each scale. Scores range from 0-18 for Social Behavior, 0-18 for Academic Behavior, 0-21 for Emotional Behavior, and 0-57 for Total Behavior. The Total Behavior score is calculated by summing the Social Behavior, Academic Behavior, and Emotional Behavior sub-scale scores. SAEBRS scores can be classified as "Low Risk," "Some Risk," and "High Risk." These risk categories indicate the frequency of behavior demonstrated by the child that could be indicative of challenging behavior in school. Higher scores are indicative of better student behavior and more appropriate functioning.

#### **Frequency scores and comparison data**

Fast Bridge, the SAEBRS publisher, reports the following score ranges and associated risk levels. Scores for the SAEBRS are provided as raw scores and are also categorized by risk level. For simplicity, each dimension of the executive function skill is presented separately.

Table 2a shows raw score data results.

<b>Scale</b>	<b>High Risk</b>	<b>Some Risk</b>	<b>Low Risk</b>
Total	0-23	24-36	37+
Social	0-7	8-12	13+
Academic	0-5	6-9	10+
Emotional	0-11	12-15	16+



**Table 2a: Mean Scores and Statistical Significance of Social Behavior Scores of TOP Graduates Compared to Control Students, K-5<sup>th</sup> Grades (2023-2024)**

Grade Level	Number of Students		Mean Score		t Test	Statistical Significance
	TOP	Control	TOP	Control		
<b>Kindergarten</b>	101	101	14.0	12.4	2.2	<i>p</i> <.05
<b>First Grade</b>	91	91	15.0	13.7	2.0	<i>p</i> <.05
<b>Second Grade</b>	85	85	15.0	13.9	3.4	<i>p</i> <.01
<b>Third Grade</b>	55	55	14.0	12.2	4.9	<i>p</i> <.01
<b>Fourth Grade</b>	95	95	13.0	11.7	4.7	<i>p</i> <.01
<b>Fifth Grade</b>	92	92	13.0	11.9	3.9	<i>p</i> <.01

These data indicate that TOP graduates enter school with better social behaviors (i.e., less arguing, better cooperation with peers, fewer angry outbursts, less disruptive behavior, and more polite and socially appropriate behaviors) than students in the Control Group. Additionally, teachers rated TOP graduates higher on these social behaviors than the Control Group students through fifth grade.

Learning how to get along socially also has predictive value in terms of building relationships and establishing capabilities of social activity (Elksnin & Elksnin, 2000). Within the social-emotional learning framework, social behaviors support the social medium of learning

(Barody et al., 2016). In fact, social behaviors as one of five critical noncognitive factors that predict success beyond school (Farrington et al., 2012). Table 2a provides evidence that the majority of TOP children display these positive social behaviors. The table also provides evidence indicating that these differences are statistically significant.

**Table 2b: Percentage of TOP Students in Each Social Behavior Risk Category, K-5<sup>th</sup> Grades (2023-2024)**

Grade Level	High Risk		Some Risk		Low Risk	
	TOP	Control	TOP	Control	TOP	Control
<b>Kindergarten</b>	0%	5%	15%	18%	85%	77%
<b>First Grade</b>	0%	7%	19%	21%	81%	72%
<b>Second Grade</b>	0%	11%	18%	18%	82%	71%
<b>Third Grade</b>	0%	9%	27%	24%	73%	67%
<b>Fourth Grade</b>	0%	12%	37%	33%	63%	55%
<b>Fifth Grade</b>	0%	9%	34%	31%	64%	60%
<b>Total Average</b>	<b>0%</b>	<b>9%</b>	<b>25%</b>	<b>24%</b>	<b>75%</b>	<b>67%</b>

In order to better understand the percentage of TOP students exceeding the average appropriate social behavior of the students in the Control Group, Table 2b presents the percentage of students in each risk level. Social behavior risk measures the frequency with which a student displays behaviors that limit his/her ability to maintain age-appropriate relationships with peers and adults. Comparing TOP graduates to students in the Control Group, the majority of them were perceived by their teachers to be “Some or Low Risk” regarding social behaviors.

This indicates that TOP graduates displayed better social behavior and more appropriate social functioning than those in the Control Group.

**Table 3a: Mean Scores and Statistical Significance of Academic Behavior Scores of TOP Graduates Compared to Control Students, K-5<sup>th</sup> Grades (2023-2024)**

Grade Level	Number of Students		Mean Score		t Test	Statistical Significance
	TOP	Control	TOP	Control		
<b>Kindergarten</b>	101	101	13.8	12.1	6.0	$p < .001$
<b>First Grade</b>	91	91	12.9	11.1	6.1	$p < .001$
<b>Second Grade</b>	85	85	12.8	10.9	6.2	$p < .001$
<b>Third Grade</b>	55	55	12.6	10.6	5.2	$p < .001$
<b>Fourth Grade</b>	95	95	12.7	11.8	3.1	$p < .01$
<b>Fifth Grade</b>	92	92	12.9	11.2	5.8	$p < .001$

These data indicate that TOP graduates enter school with better academic behaviors (i.e., higher interest in academic topics, more prepared for instruction, and higher levels of academic engagement) than students in the Control Group. Additionally, teachers rated TOP graduates higher on these academic behaviors than the Control Group students through fifth grade. Research indicates that students with good academic achievements have higher incomes, better employment benefits, and more advancement opportunities (e.g., Tentama & Abdillah, 2019). Additionally, academically successful students have higher self-esteem and self-confidence, low

levels of anxiety and depression, are socially inclined, and are less likely to engage in substance abuse (e.g., Regier, 2011). Table 3a provides evidence that the majority of TOP children demonstrate these positive academic behaviors. The table also provides evidence indicating that these differences are statistically significant.

**Table 3b: Percentage of TOP Students in Each Academic Behavior Risk Category, K-5<sup>th</sup> Grades (2023-2024)**

Grade Level	High Risk		Some Risk		Low Risk	
	TOP	Control	TOP	Control	TOP	Control
<b>Kindergarten</b>	0%	5%	34%	35%	66%	60%
<b>First Grade</b>	0%	7%	12%	26%	88%	67%
<b>Second Grade</b>	0%	4%	14%	27%	86%	69%
<b>Third Grade</b>	0%	3%	24%	31%	76%	66%
<b>Fourth Grade</b>	0%	5%	33%	37%	67%	58%
<b>Fifth Grade</b>	0%	6%	18%	22%	82%	72%
<b>Total Average</b>	<b>0%</b>	<b>5%</b>	<b>23%</b>	<b>30%</b>	<b>77%</b>	<b>65%</b>

In order to better understand the percentage of TOP students exceeding the average appropriate academic behavior of the students in the Control Group, Table 3b presents the percentage of students in each of the risk levels. Academic behavior risk measures the frequency with which a student displays behaviors that limit his/her ability to be prepared for, participate in, and benefit from academic instruction. Comparing TOP graduates to students in the Control Group, the majority of TOP graduates were perceived by their teachers to be “Some or Low

Risk” regarding academic behaviors. This indicates that TOP graduates displayed better academic behavior and more appropriate academic functioning than those in the Control Group.

**Table 4a: Mean Scores and Statistical Significance of Emotional Behavior Scores of TOP Graduates Compared to Control Students, K-5<sup>th</sup> Grades (2023-2024)**

Grade Level	Number of Students		Mean Score		t Test	Statistical Significance
	TOP	Control	TOP	Control		
<b>Kindergarten</b>	101	101	17.9	15.4	8.9	$p<.001$
<b>First Grade</b>	91	91	17.7	15.6	7.1	$p<.001$
<b>Second Grade</b>	85	85	17.8	16.0	5.9	$p<.001$
<b>Third Grade</b>	55	55	17.6	15.5	5.5	$p<.001$
<b>Fourth Grade</b>	95	95	17.8	15.9	6.5	$p<.001$
<b>Fifth Grade</b>	92	92	17.9	15.7	7.5	$p<.001$

These data indicate that TOP graduates enter school with better emotional behaviors (i.e., less sadness, fearfulness, better able to adapt to change, more positive attitude) than students in the Control Group. Additionally, teachers rate TOP graduates higher on these emotional behaviors than the Control Group students through fifth grade. Research indicates that emotion regulation ability predicts academic success, quality of interpersonal relationships, and well-being (e.g., MacCann et al., 2020). Table 4a provides evidence that the majority of TOP children

demonstrate these positive emotional behaviors. The table also provides evidence indicating that these differences are statistically significant.

**Table 4b: Percentage of TOP Students in Each Emotional Behavior Risk Category, K-5<sup>th</sup> Grades (2023-2024)**

Grade Level	High Risk		Some Risk		Low Risk	
	TOP	Control	TOP	Control	TOP	Control
<b>Kindergarten</b>	0%	7%	39%	35%	61%	58%
<b>First Grade</b>	0%	6%	15%	16%	85%	78%
<b>Second Grade</b>	0%	6%	20%	24%	80%	70%
<b>Third Grade</b>	0%	5%	22%	20%	78%	75%
<b>Fourth Grade</b>	0%	7%	32%	31%	68%	52%
<b>Fifth Grade</b>	0%	3%	19%	21%	81%	76%
<b>Total Average</b>	<b>0%</b>	<b>6%</b>	<b>25%</b>	<b>25%</b>	<b>75%</b>	<b>69%</b>

In order to better understand the percentage of TOP students exceeding the average appropriate emotional behavior of the students in the Control Group, Table 4b presents the percentage of students in each risk level. Emotional behavior risk measures the frequency in which a student displays actions that limit his/her ability to regulate internal states, adapt to change, and respond to stressful/challenging events. Comparing TOP graduates to students in the Control Group, the majority of TOP graduates were perceived by their teachers to be “Some or Low Risk” regarding emotional behaviors. This indicates that TOP graduates displayed better emotional behavior and more appropriate emotional functioning than the Control Group.

<b>Academics</b>
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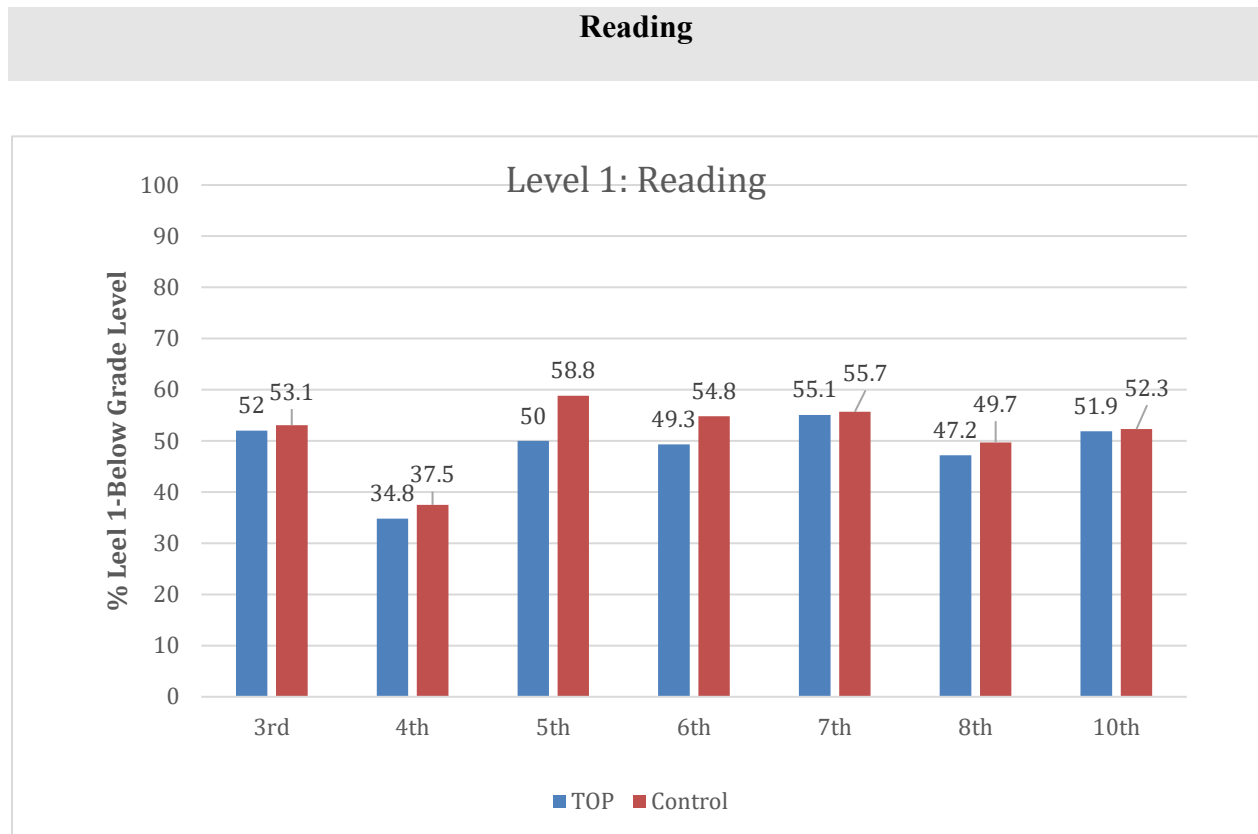
**Academic Information**

Academics are presented as reading and math performance indicators from the Kansas Assessment Program state assessments beginning in the third grade for the 2023-2024 school year. Also included in this section are the cumulative GPAs for middle and high school students. Special education is considered a subset of academics because it is generally considered part of the academic curriculum. A demographically matched Control Group with which we could compare the TOP graduates in academic subjects and special education placements was provided by the Wichita School District.

**Standardized Test Scores**

Beginning 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 2023-2024 school year. We have reading test scores for the third, fourth, fifth, sixth, seventh, eighth, and tenth grades (state assessments are not administered to ninth or twelfth graders. Eleventh graders are only assessed in science). We have math test scores for third, fourth, fifth, sixth, seventh, eighth, and tenth grades. The state assessments rely primarily on a level of performance ranking (Level 1, 2, 3, or 4) relative to grade-level peers in the same content area (reading and math). According to the information from the state assessment criteria, the four performance levels are: Level 1, a student is “Below Grade Level”; Level 2, a student is “At Grade Level, But Not On Track For College Or Career Readiness”; Level 3, a student is “At Grade Level And On Track For College Or Career Readiness,” Level 4, a student “Exceeds Grade-level Expectations And Is On Track For College Or The Workplace.”

For the purpose of this study, we are particularly interested in Level 1 (“Below Grade Level”) and Level 3 (“At Grade Level And On Track For College Or Career Readiness”) as these segments signify educational failure or success. Figures 1-4, which follow, indicate the percentage comparison of TOP graduates and the Control Group in reading and math. We also have subsequently calculated the likelihood comparisons for the groups for reading at Levels 1 and 3. This is shown in Tables 5a through 5d.



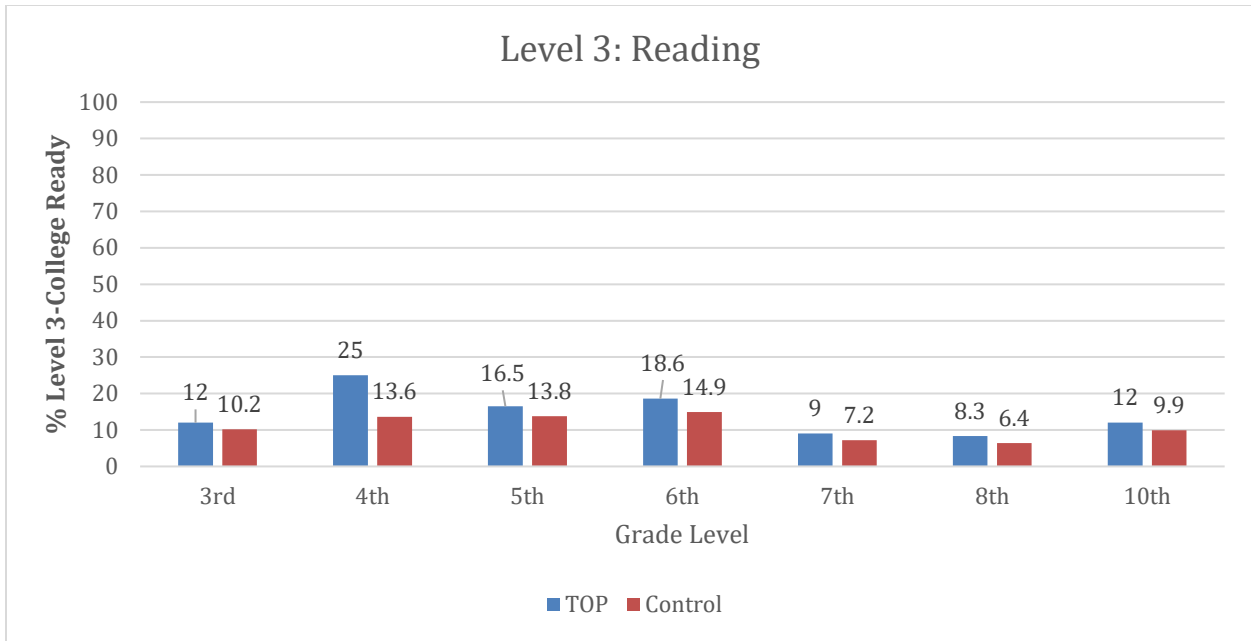
**Figure 1**  
**KAP Level 1 Performance Ratings (% Of Students Performing Below Grade Level) in Reading for TOP Graduates Compared to the Control Group (2023-2024)**



**Table 5a: Likelihood of Level 1 Performance**

<b>Level 1</b>	<b>Reading Assessments</b>	
	<b>Grade</b>	<b>% more or less likely to perform below grade level</b>
	<b>3<sup>rd</sup></b>	2.1% less
	<b>4<sup>th</sup></b>	7.8% less
	<b>5<sup>th</sup></b>	17.6% less
	<b>6<sup>th</sup></b>	11.2% less
	<b>7<sup>th</sup></b>	1.1% less
	<b>8<sup>th</sup></b>	5.3% less
	<b>10<sup>th</sup></b>	1.0 % less
	<b>Total Average</b>	<b>6.6 % less</b>

The Level 1 reading assessment data indicate that TOP graduates in seven out of seven grades are less likely to perform “Below Grade Level” than the Control Group.



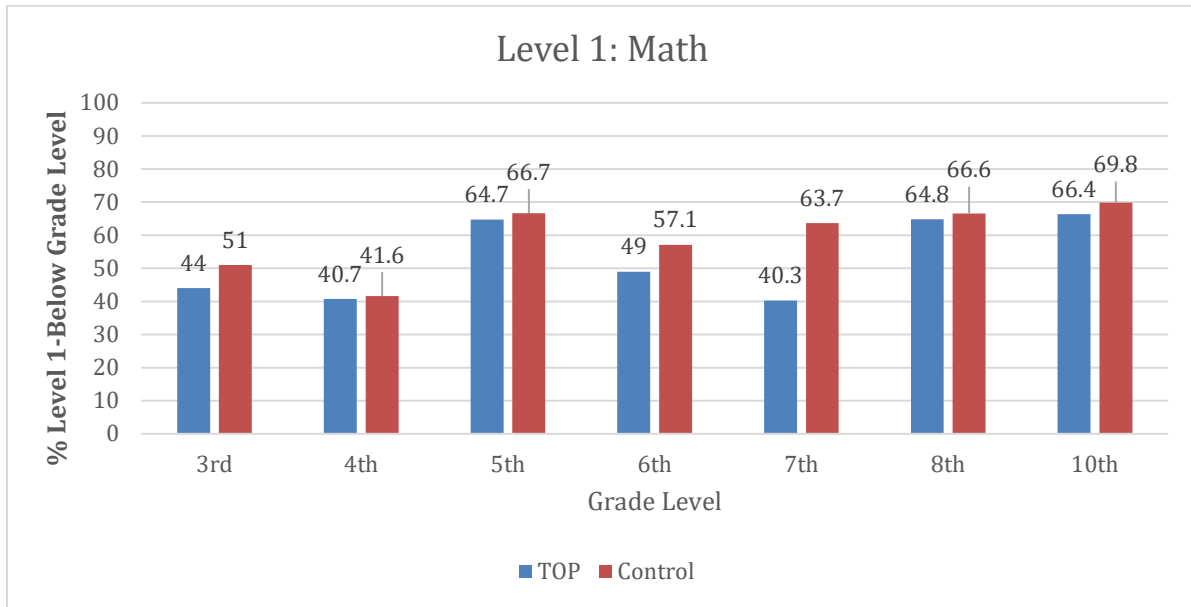
**Figure 2**  
**KAP Level 3 Performance Ratings (% Of Students Performing At College Ready levels in Reading for TOP Graduates Compared to the Control Group (2023-2024))**

**Table 5b: Likelihood of Level 3 Performance**

	Reading Assessments	
	Grade	% more or less likely to perform at grade level, progressing toward college readiness
<b>Level 3</b>	3 <sup>rd</sup>	18% more
	4 <sup>th</sup>	83% more
	5 <sup>th</sup>	20% more
	6 <sup>th</sup>	25% more
	7 <sup>th</sup>	25% more
	8 <sup>th</sup>	23% more
	10 <sup>th</sup>	18% more
	<b>Total Average</b>	<b>30.3% more</b>

The Level 3 reading assessment data indicate that TOP graduates in seven out of seven grades are “More Likely To Perform At Grade Level, Progressing Toward College Readiness” than the Control Group.

**Math**

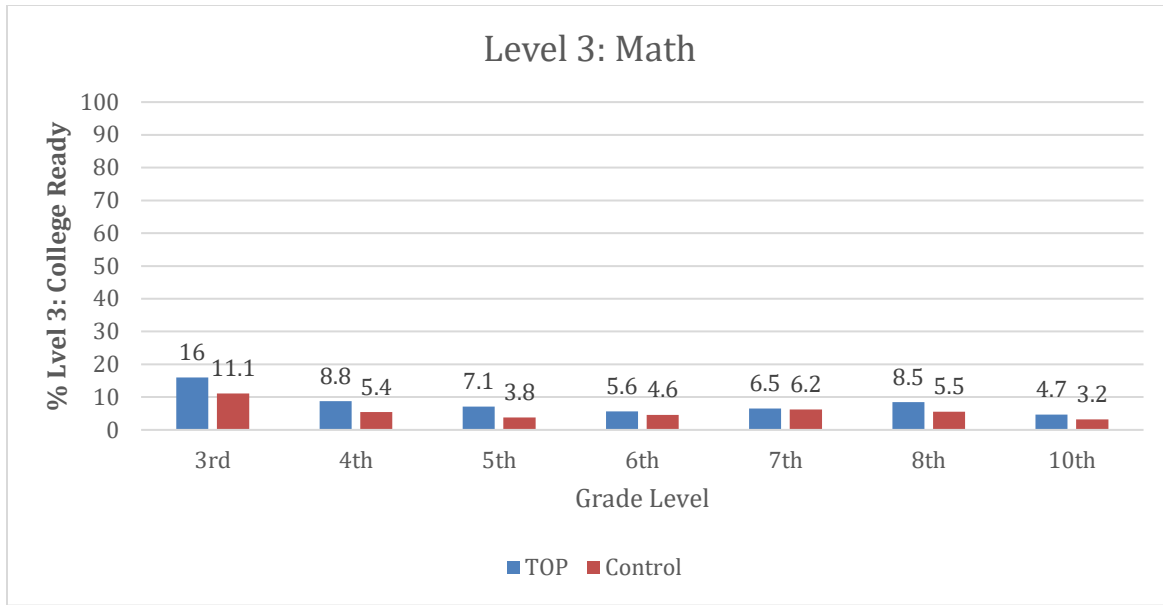


**Figure 3**  
**KAP Level 1 Performance Ratings (%Of Students Performing Below Grade Level) in Math for TOP Graduates Compared to the Control Group (2023-2024)**

**Table 5c: Likelihood of Level 1 Performance**

<b>Level 1</b>	<b>Math Assessments</b>	
	<b>Grade</b>	<b>% more or less likely to fall below grade level</b>
	<b>3<sup>rd</sup></b>	16% less
	<b>4<sup>th</sup></b>	2% less
	<b>5<sup>th</sup></b>	3% less
	<b>6<sup>th</sup></b>	16% less
	<b>7<sup>th</sup></b>	58% less
	<b>8<sup>th</sup></b>	3% less
	<b>10<sup>th</sup></b>	5% less
	<b>Total Average</b>	<b>14.7% less</b>

The Level 1 math assessment data indicate that TOP graduates for seven out of seven grades are less likely to perform “Below Grade Level” than Control children.



**Figure 4**  
**KAP Level 3 Performance Ratings (%Of Students Performing At College Ready Level) in Math for TOP Graduates Compared to the Control Group (2023-2024)**  
**Table 5d: Likelihood of Level 3 Performance**

	Math Assessments	
	Grade	% more or less likely to perform at grade level, progressing toward college readiness
Level 3	3 <sup>rd</sup>	44% more
	4 <sup>th</sup>	63% more
	5 <sup>th</sup>	86% more
	6 <sup>th</sup>	22% more
	7 <sup>th</sup>	5% more
	8 <sup>th</sup>	55% more
	10 <sup>th</sup>	47% more
	<b>Total Average</b>	<b>46% more</b>

The Level 3 math assessment data indicate that TOP graduates in seven out of seven grades are more likely to perform at grade level than the Control Group.

Overall, TOP graduates scored favorably on reading and math on KAP assessments for the 2023-2024 school year. On Level 1 measures (the likelihood of a child performing “Below Grade Level”) in reading, TOP graduates tested less likely in seven out of seven grades when compared to children from the Control Group. On Level 3 measures (the likelihood of a child performing “At Grade Level and Progressing Toward College Readiness”) in reading, TOP graduates rated more likely in seven out of seven grades tested when compared to the Control Group. On Level 1 math measures, TOP graduates tested less likely to perform “Below Grade Level” in seven of seven grades when compared to children from the Control Group. On Level 3 math measures, TOP graduates tested more likely to perform at grade level in seven of seven grades tested when compared to the Control Group.

### **Cumulative GPA scores**

Academic cumulative grade point averages were gathered for the sixth through twelfth grade TOP and Control Group students. Table 6 reports these averaged GPAs for TOP students and Control Group students.

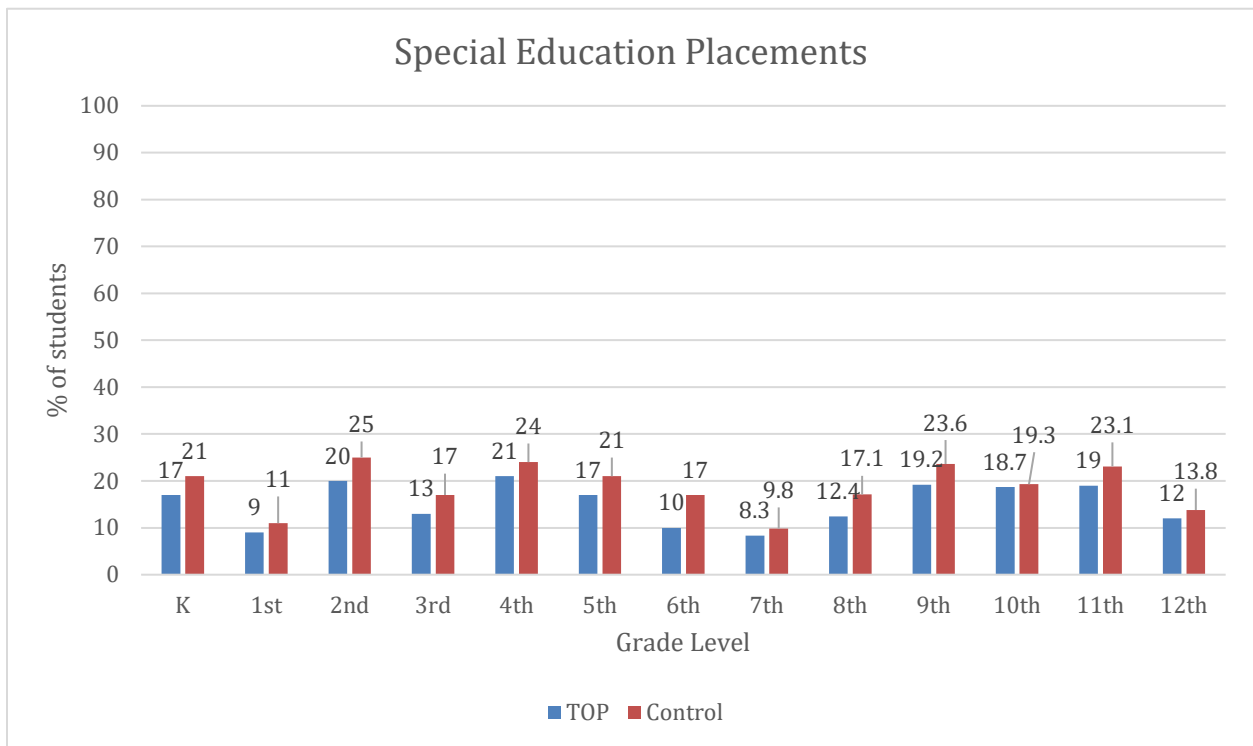
**Table 6: Cumulative Grade Point Averages for 6th-12th Grade TOP and Control Group Students (2023-2024)**

Grade Level	GPAs			
	TOP		Control	
	No.	GPA	No.	GPA
<b>Sixth Grade</b>	87	2.8	87	2.8
<b>Seventh Grade</b>	82	2.7	82	2.6
<b>Eighth Grade</b>	78	2.5	78	2.3
<b>Ninth Grade</b>	72	2.2	72	2.0
<b>Tenth Grade</b>	122	2.4	122	2.2
<b>Eleventh Grade</b>	79	2.3	79	2.0
<b>Twelfth Grade</b>	59	2.4	59	2.3
<b>Total Average</b>	<b>579</b>	<b>2.5</b>	<b>579</b>	<b>2.3</b>

In seven of seven grades, TOP graduates had the same or higher GPAs than their Control peers. When aggregated, TOP graduates had a higher GPA overall than those in the Control Group.

### **Special education placement**

Because the sample sizes are so different for the two groups, percentages are used to report on special education placements. For both groups, there was considerable variation in the reasons for special education placements (with speech/language being the primary one for TOP students). TOP students had fewer special education placements than their Control Group peers at all grades. When all grades were combined, TOP graduates were 23.8% less likely to need special education services.



**Figure 5**  
**Special Education Placements for TOP and Control Group from K-12th Grades in Percentages (2023-2024)**

### Attitudes

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 important 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.

#### **School attendance**

During the 2023-2024 school year, the TOP students averaged 90.9% attendance rate. In thirteen of thirteen grades, they surpassed the attendance rate of their Control Group peers. By high school, TOP students were 1.0% more likely to attend classes than their Control Group peers. Table 7 provides the data for TOP students and Control Group Students.



**Table 7: Average Attendance Rates, in Percentages, for TOP and Control Group Students from K-12th Grades (2023-2024)**

Grade Level	Attendance Rates			
	TOP		Control	
	No.	%	No.	%
<b>Kindergarten</b>	101	90.6%	101	90.2%
<b>First Grade</b>	91	91.6%	91	90.7%
<b>Second Grade</b>	85	92.7%	85	91.8%
<b>Third Grade</b>	55	91.9%	55	90.7%
<b>Fourth Grade</b>	95	93.4%	95	92.1%
<b>Fifth Grade</b>	92	92.4%	92	91.4%
<b>Sixth Grade</b>	87	93.2%	87	93.0%
<b>Seventh Grade</b>	82	92.8%	82	92.0%
<b>Eighth Grade</b>	78	89.5%	78	88.9%
<b>Ninth Grade</b>	72	88.7%	72	85.0%
<b>Tenth Grade</b>	122	89.3%	122	84.8%
<b>Eleventh Grade</b>	79	87.1%	79	84.3%
<b>Twelfth Grade</b>	59	88.7%	59	87.3%
<b>Average</b>	<b>90.9%</b>		<b>89.4%</b>	

**Discipline Referrals**

We also obtained data on 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 once, there may be many reasons besides misbehavior. Therefore, we decided to only count repeat office visits as a means of discipline referrals. TOP graduates had fewer repeat office referrals for thirteen out of thirteen grades. The scores suggest an increase in discipline referrals in the intermediate grades (fifth through eighth grades) for the Control Group and TOP students, peaking in seventh grade. In seventh grade, TOP graduates were 13.5% less likely to have repeat office referrals than the Control Group. Table 8 provides the percentages for each grade.

**Table 8: Repeat Discipline Referrals Rates, in Percentages, for TOP and Control Group Students from K-12th Grades (2023-2024)**

Grade Level	Repeat Referral Percentages	
	TOP	Control
Kindergarten	1.0%	3.3%
First Grade	1.4%	2.7%
Second Grade	1.6%	3.2%
Third Grade	1.8%	2.4%
Fourth Grade	1.5%	2.8%
Fifth Grade	2.2%	2.8%
Sixth Grade	2.3%	3.1%
Seventh Grade	3.2%	3.7%
Eighth Grade	2.7%	3.5%
Ninth Grade	1.7%	2.3%
Tenth Grade	1.0%	2.2%
Eleventh Grade	1.3%	2.4%
Twelfth Grade	1.0%	2.2%
<b>Total Average</b>	<b>1.8%</b>	<b>2.8%</b>

### **Middle & High School Information**

#### **School suspensions**

Because we do not seek survey data from teachers of students beyond the fifth grade, we asked for some additional information about students as they advanced to middle school and high school. We asked for disciplinary information regarding out-of-school suspensions and

expulsions of the sixth through twelfth-grade students. There were no expulsions for the seven grades. Table 9 provides the out-of-school suspension percentages for this year.

**Table 9: Suspension Rates, in Percentages, for 6<sup>th</sup>-12th Grade TOP and Control Group Students (2023-2024)**

Grade Level	Suspension Rate Percentages	
	TOP	Control
Sixth Grade	1.4%	2.0%
Seventh Grade	1.6%	2.2%
Eighth Grade	1.8%	2.4%
Ninth Grade	1.6%	2.2%
Tenth Grade	1.7%	2.3%
Eleventh Grade	1.9%	2.6%
Twelfth Grade	1.3%	2.4%
<b>Total Average</b>	<b>1.6%</b>	<b>2.3%</b>

The rates show fewer suspensions for TOP children than for Control students across the grades.

TOP graduates are 30.4% less likely to get suspended than Control Group students.

### Summary

In summary, across all categories, TOP graduates outperformed students in the Control group. Table 10 provides a comparison of 2022-2023 TOP data to 2023-2024 TOP data.

### Executive Function Skills

Learning executive function 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 sixteen years of evidence that the TOP Early Learning Centers have provided a means for this to occur. TOP children have better social, academic, and emotional behaviors than students in the Control Group. When comparing TOP graduates with students in the Control Group, they demonstrate more positive academic behaviors; 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, making it even more noticeable by the fifth grade when the students leave elementary school. Overall, the majority of TOP graduates were either in the *some* or *low-risk* category in their class in all grades and all categories. They demonstrate strong social, academic, and emotional behavior and school-appropriate functioning.

### **Academics**

**Standardized Test Scores.** Beginning in third grade, the Kansas State Department of Education administers standardized reading and math assessments. Under these comparisons, TOP graduates performed favorably. TOP graduates were less likely to perform “Below Grade Level” in seven of seven grades tested in reading and math. Similarly, TOP graduates were more likely to be “At Grade Level And Progressing To College Readiness” in seven of seven grades tested in reading and math.

**Cumulative grade point averages.** GPAs were also collected for middle and high school students; TOP graduates' GPAs were the same or higher than those of the Control Group in seven of seven grades reported.

**Special education placement.** When data were examined, TOP graduates were less likely than the Control Group to be placed in special education through twelfth grade. Overall, TOP graduates were 23.8% less likely to have a special education placement than their Control

Group peers. This is important given the cost savings associated with fewer special education placements. Cost savings per child range from \$2,122 to \$8,236 (Belfield, 2005).

### Attitudes

In terms of attendance, TOP children's attendance was high each year, from kindergarten through twelfth grade. TOP graduates were 1.0% more likely to attend classes 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 significantly fewer repeat discipline referrals than those in the Control Group across all grades. For the students, we also collected data on suspensions. TOP graduates had substantially fewer suspension rates in high school than their Control peers. Both groups of students had zero expulsions across all grades.

**Table 10: 2022-2023 TOP Data Compared to 2023-2024 TOP Data**

Category	TOP 2022-2023 Data	TOP 2023-2024 Data
Executive Function	% at Low Risk	% at Low Risk
Social Behaviors	67%	75%
Academic Behaviors	56%	77%
Emotional Behaviors	60%	75%
Academics		
State Assessments	% More Likely to Score on Grade Level	% More Likely to Score on Grade Level
ELA	33%	30.3%
Math	26.3%	46%
GPA	Overall GPA	Overall GPA
	2.3	2.5
SPED	% Less Likely to Need SPED Services	% Less Likely to Need SPED Services
	13%	23.8%
Attitudes	Overall %	Overall %
Attendance	90.6%	90.9%
Repeat Office Referrals	1.7%	1.8%

### Conclusions

After sixteen 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' executive function skills are statistically greater than their classmates; and 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 and high school students, TOP graduates outperformed the Control Group. Thus, at least through the twelfth grade, there is evidence of long-term benefits to a quality early education program.

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