



COLLEGE OF EDUCATION
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School Psychology



Final Report

TOP Early Learning Centers Longitudinal Research Project

2008-2012

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 five years for the longitudinal research project that will follow TOP graduates throughout their school years and into adulthood. Teachers responded to surveys that addressed social skills in the areas of appropriate behavior, competent social interactions and emotional maturity of TOP graduates from kindergarten through fifth grades. Demographic data were collected on attendance, discipline referrals, grade retentions, special education placements, and for third, fourth, and fifth grade students, state standardized test scores in math and reading.

Data Analyses

The current data analyses cover the TOP children in kindergarten, first, second, third, fourth, and fifth grades beginning with the 2007-2008 school year through 2011-2012.

Frequency Scores and Comparison Data

Frequency data addressed the social skills that the TOP Early Learning Centers' curriculum stressed. *Behaviorally*, there is evidence that TOP children have learned this skill well and use it appropriately about 75% of the time. Comparing TOP children to non-TOP students, teachers perceive TOP children to use significantly more appropriate behaviors than their non-TOP peers. As far as *competent social interactions*, more than half of the TOP children use competent social interactions 75% or more of the time and more than 90% of them are competent greater than half of the time. In comparing TOP children to their non-TOP peers, once again teachers perceive TOP children to have significantly more competent social interactions at all elementary grades. In terms of *emotional maturity*, by the second grade, greater than 90% of the children act emotionally mature half of the time. In comparing TOP children with their non-TOP peers, teachers perceive TOP children are significantly more emotionally mature than the non-TOP students.

Demographic Data

There is growing evidence that there are long-term benefits from the TOP Early Learning Program. By third, fourth and fifth grade, attendance is better for the TOP children than their non-TOP peers; by third grade, TOP children have fewer repeat discipline referrals than non-TOP students, and by fourth and fifth grades, TOP children have no repeat discipline referrals whereas their non-TOP peers still are having discipline problems; and, by second grade, special education placements for TOP children occur one-third to one-half less often as placements of non-TOP children. Regarding standardized tests, TOP children in third, fourth, and fifth grade have a considerably lower percentage of students who do not meet standards in both math and reading compared to the non-TOP group.

FINAL REPORT 2008-2012

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For year five of the TOP Longitudinal Research Project, we collected data from students in the kindergarten, first, second, third, fourth, and fifth grades from the Derby, Wichita, and area public and parochial schools. Of the 623 students for which parents had signed consent forms (91% participant rate) agreeing that their children could participate in the study, we were able to locate 554 of them in school systems in Kansas. We asked teachers to respond to a Social Questionnaire consisting of questions pertaining to behavior, social interactions, and emotional maturity for each of the students from whom we had received consents and whom we could locate in the schools. For the fifth year in a row, Derby school teachers had a 100% response rate (n= 73 teachers) and 170 children. For Wichita, we have a 98% response rate (243 teachers out of 249 possible) and 336 children (out of 343 possible). For the area public schools, there was a 94% response rate (30 out of 32 teachers) and 30 out of 32 children. For the parochial schools (both Catholic and Protestant), we also had a 100% response rate (8 teachers) and 9 children. Based on the total number of eligible children for the study, the number of children we located in the schools, the rate of return of the surveys we sent, the final response rate was 80%. 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 in Kansas schools during the 2011-2012 school year and the number of teachers who responded to surveys.

The final task was to collect information from the Derby and Wichita school districts in terms of demographic data: Attendance, special education placements, discipline referrals, grade retentions and, for the third, fourth, and fifth grades, state standardized test scores for reading and math.

Table 1

Year in Which Child Graduated from TOP Program, Number of Consent Forms, Percent of Children Participating in the Longitudinal Study, Number of Students Located in Kansas Schools, Number of Surveys Received from Teachers, Percent of Surveys Received, Percent of Participation Overall

Year	Total Eligible	Number of Consents	Percent Participating	No. Stud. KS Schools	Surveys Received	% Surveys Received	% Partic. Overall
2006	44	26	59%	26	25	96%	57%
2007	51	30	59%	28	26	93%	51%
2008	114	113	99%	100	100	100%	88%
2009	152	137	90%	121	120	100%	79%
2010	149	144	97%	125	122	98%	82%
2011	175	172	98%	154	152	99%	87%
Totals	686	623	91%	554	545	98%	80%

Data Analyses

The data analyses address three areas: (a) Frequencies of scores on each of the three social skills variables (appropriate behavior, competent social interactions and emotional maturity for each grade), (b) a comparison of the social skill acumen of TOP children compared to the teachers' perspectives regarding the *average* social skill used by the remainder of the teachers' classes and (c) demographic analyses (comparison of attendance, special education placement, discipline referrals, grade retention, and scores on reading and math standardized tests for third, fourth, and fifth grade students in the Wichita and Derby school districts with a control sample).

Teacher Surveys

We asked the teachers to rate the TOP graduates on three dimensions of social skills: appropriate behaviors, competent social interactions and emotional maturity (areas that were integral to the TOP curriculum). The three variables are scored as follows: A "4" represents that the child uses the skill more than 75% of the time. A "3" indicates that the child uses the skill from 50% to 75% of the time. A "2" suggests that the child uses the skill from 25% to 49% of the time and a "1" indicates that the child uses the skill less than 25% of the time.

Frequency scores and comparison data. The frequency scores are tabulated for TOP students only. We have no data for the non-TOP children. There are frequency scores for the six elementary grades (kindergarten through the fifth grades) on the three dimensions of social skills. The tables state the percentage of TOP children who scored a "4," a "3," a "2," or a "1" (see explanation of numbers above) on each dimension of the social skills (appropriate behaviors, competent social interactions and emotional maturity) for each of the five grades measured. For kindergarten, we have five years of data (2007, 2008, 2009, 2010, and 2011); for the first grade, we also have five years of data (2006, 2007, 2008, 2009, and 2010). For the second grade, we have four years of data (2006, 2007, 2008, and 2009 cohorts); for third grade, we have three years of data (2006, 2007, and 2008); for the fourth grade, we have two years' data (2006 and 2007), and for the fifth grade, we have just this year's data (2006).

Another important aspect of the study was directed at comparing the TOP graduates with the remainder of students in each teacher's class. We asked the teachers five questions in which we requested them to compare the TOP students with the other children in their classes in terms of their appropriate behavior, competent social interactions and emotional maturity. If the TOP student was performing worse than his peers, he received a "1"; if he or she was performing equal to his peers, he received a score of "2"; if the TOP child performed better than his peers, he received a "3." Thus, the mean score for behavior competence, emotional maturity and social competence was a "2" (what the teacher considered *average* social skills for that particular class). For the TOP students to have greater social skills than their non-TOP peers, their scores had to be above this "2" average score. We computed the actual mean scores on each of these three domains for the TOP children and compared the TOP graduate mean scores with the prescribed mean scores for the comparison groups. T tests were conducted to determine if these differences were statistically significant.

Because all elementary grades are represented in this report, it may be more relevant to look at each social skill separately, both as a measure of frequency utilized by a TOP student and as compared with non-TOP peers.

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, 2004). Thus, Tables 2 and 3 provide evidence that TOP children have learned this skill and use it appropriately 75% of the time (see Table2). Comparing TOP children to non-TOP students, teachers perceive TOP children to use significantly more appropriate behaviors than their non-TOP peers (see Table 3).

Table 2

Percentages of Students’ Scores for Appropriate of Kindergarten, First, Second, Third, Fourth, and Fifth Grade Children Who Graduated from TOP Early Learning Centers from 2006 through 2011

Grade	Years	4 (%)	3 (%)	2 (%)	1 (%)
Kindergarten	2007, 2008, 2009, 2010, 2011 (n=520)	56	38	6	0
First Grade	2006, 2007, 2008, 2009, 2010 (n=395)	66	32	2	0
Second Grade	2006, 2007, 2008, 2009 (n= 275)	64	33	3	0
Third Grade	2006, 2007, 2008 (n = 160)	68	29	3	0
Fourth Grade	2006, 2007 (n = 55)	80	20	0	0
Fifth Grade	2006 (n = 23)	65	35	0	0

Table 3

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	No.	Years	Class Av Mean	TOP Mean	t Test Results	Stat. Signif.
Kindergarten	520	2007, 2008, 2009, 2010, 2011	2	2.20	7.76	.000**
First Grade	395	2006, 2007, 2008, 2009, 2010	2	2.25	8.58	.000**
Second Grade	276	2006, 2007, 2008, 2009	2	2.29	8.15	.000**
Third Grade	160	2006, 2007, 2008	2	2.26	5.94	.000**
Fourth Grade	55	2006, 2007	2	2.47	5.80	.000**
Fifth Grade	23	2006	2	2.35	3.60	.002**

**p<.005

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 4 indicates the abilities of the TOP children in their social interactions, suggesting that more than half of the TOP children use competent social interactions 75% or more of the time and greater than 90% of them are competent more than half of the time. In comparing TOP children to their non-TOP peers, once again teachers perceive TOP children to have significantly more competent social interactions at all elementary grades (see Table 5).

Table 4

Percentages of Students' Scores for Competent Social Skills of Kindergarten, First, Second, Third, Fourth, and Fifth Grade Children Who Graduated from TOP Early Learning Centers from 2006 through 2011

Grade	Years	4 %	3 %	2 %	1 %
Kindergarten	2007, 2008,, 2009, 2010, 2011 (n = 520)	56	36	8	0
First Grade	2006, 2007, 2008, 2009, 2010 (n = 395)	55	36	8	1
Second Grade)	2006, 2007, 2008, 2009 (n = 275)	60	32	8	0
Third Grade	2006, 2007, 2008 (n = 160)	60	32	8	0
Fourth Grade)	2006, 2007 (n = 55)	73	23	4	0
Fifth Grade	2006 (n = 23)	61	39	0	0

Table 5

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	No.	Years	Class Av Mean	TOP Mean	t Test Results	Stat. Signif.
Kindergarten	520	2007, 2008, 2009, 2010,2011	2	2.24	9.91	.000**
First Grade	395	2006, 2007, 2008, 2009, 2010	2	2.27	9.58	.000**
Second Grade	276	2006, 2007, 2008, 2009	2	2.33	10.22	.000**
Third Grade	160	2006, 2007, 2008	2	2.20	4.58	.000**
Fourth Grade	55	2006, 2007	2	2.55	7.64	.000**
Fifth Grade	23	2006	2	2.28	2.87	.009**

**p<.005

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. Table 6 provides the frequency scores of the TOP children in terms of their emotional maturity levels. With the exception of the fourth grade groups, it seems that about half of the children evidence emotional maturity 75% or more of the time, and by the second grade, more than 90% of the children act emotionally mature half of the time (see Table 6). In comparing TOP children with their non-TOP peers, teachers again perceive TOP children are significantly more emotionally mature than the non-TOP students (see Table 7).

Table 6

Percentages of Students’ Scores for Emotional Maturity of Kindergarten, First, Second, Third, Fourth, and Fifth Grade Children Who Graduated from TOP Early Learning Centers from 2006 through 2011

Grade	Years	4 %	3 %	2 %	1 %
Kindergarten (n=368)	2007, 2008, 2009, 2010, 2011 (n = 520)	53	34	13	0
First Grade (n=276)	2006, 2007, 2008, 2009, 2010 (n = 395)	53	34	12	1
Second Grade (n=160)	2006, 2007, 2008, 2009 (n = 275)	55	36	9	0
Third Grade (n=61)	2006, 2007, 2008 (n = 160)	59	31	8	2
Fourth Grade (n = 26)	2006, 2007 (n = 55)	69	27	4	0
Fifth Grade	2006 (n =23)	56	40	4	0

Table 7

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	No.	Years	Class Av Mean	TOP Mean	t Test Results	Stat. Signif.
Kindergarten	520	2007, 2008, 2009, 2010, 2011	2	2.14	4.84	.000**
First Grade	395	2006, 2007, 2008, 2009, 2010	2	2.22	6.75	.000**
Second Grade	276	2006, 2007, 2008, 2009	2	2.24	6.14	.000**
Third Grade	160	2006, 2007, 2008	2	2.21	4.31	.000**
Fourth Grade	55	2006, 2007	2	2.45	5.59	.000**
Fifth Grade	23	2006	2	2.26	2.02	.05*

**p<.005 p<.05

Demographic Information

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 demographic data will be reported on TOP students who attended schools in those two districts from kindergarten through the fifth grades. Because there were few differences between the Derby and Wichita schools, the two districts were combined for data analysis. We gathered information on school attendance, special education placements, discipline referrals, grade retentions, and for third, fourth, and fifth grade children, standardized test scores in math and reading. Table 7 provides the numbers of children for whom we have demographic data for both the TOP and non-TOP groups.

Table 7

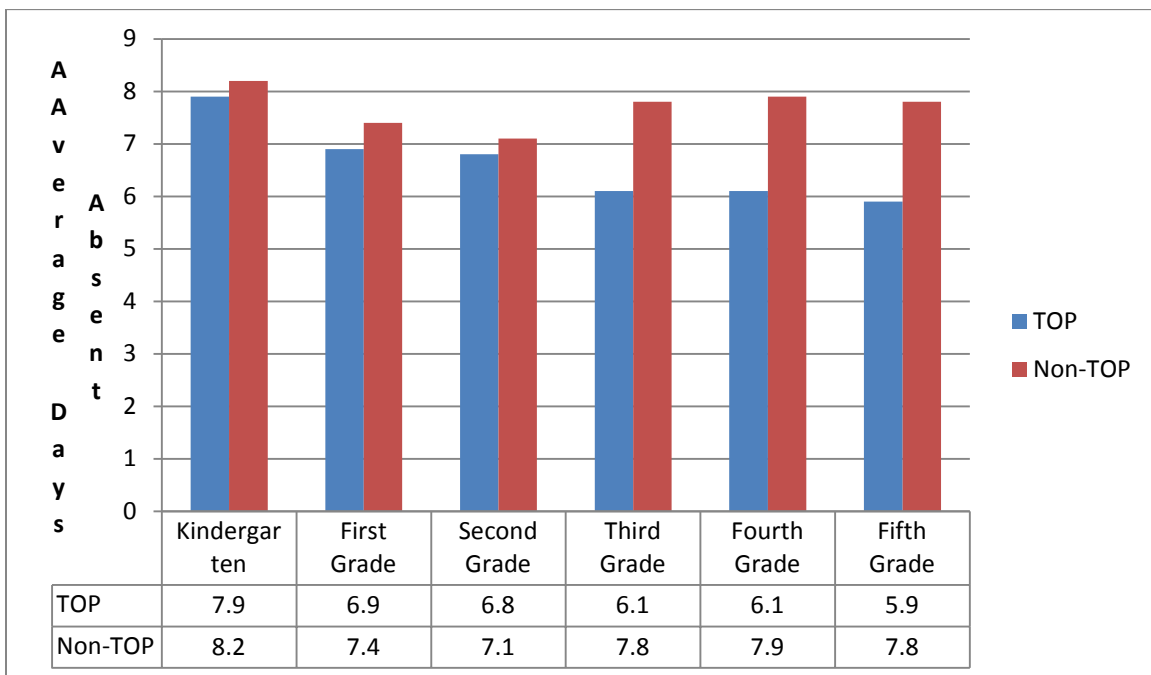
Number of Children in Demographic Data from Wichita and Derby School Districts from TOP and Control Groups

Grade in School	TOP Children			Control Group		
	Derby	Wichita	Total	Derby	Wichita	Total
Kindergarten	46	101	147	0	472	472
First Grade	34	78	112	99	354	453
Second Grade	21	86	107	32	318	350
Third Grade	26	60	86	60	247	307
Fourth Grade	16	10	26	41	36	77
Fifth Grade	12	9	21	31	23	54
Total	155	344	499	263	1450	1713

School attendance. In the past years, there has been little difference in school attendance between TOP children and their non-TOP peers. However, this year’s longitudinal data indicated an interesting finding. 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. Beginning with the third grade, the TOP children had fewer absent days from school than did their non-TOP peers. In other words, as the TOP children get older their days of absenteeism decrease. They attend school more often than their non-TOP peers. Figure 1 indicates the progress of these attendance rates throughout the years.

Figure 1

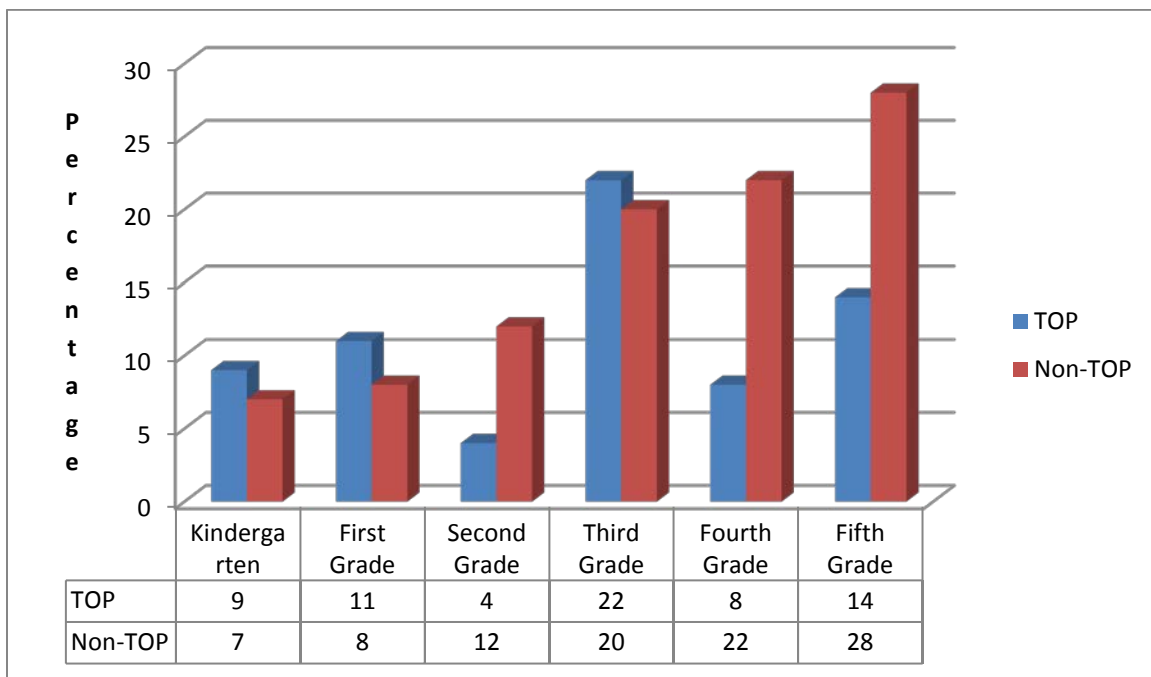
Average Days Absent By Grade for TOP and Non-TOP Children for the 2011-2012 School Year



Special education placement. Special education has mixed findings. For kindergarten and first grades, the percentage of special education placements were slightly higher for the TOP group; that could be accounted for by TOP’s stress in addressing early placement for children who need extra help. All of the TOP children who were placed in special education in kindergarten were for speech and language and all but one in first grade. By the second grade, the non-TOP group had triple the placement rate as the TOP group. The second grade and the fourth and fifth grades were consistent in their special education placements in that the TOP children were considerably lower in their special education placements (see Figure 2). For the third grade, there were a high percentage of special education placements for both the TOP and non-TOP groups. Looking at the third grade group longitudinally, part of the problem may be in the loss of students due to attrition (moving out of the area); however, there has been an increase in special education placement in both the TOP and non-TOP groups since the first grade. Since this seems to be isolated with this group and may be an anomaly. Because the fourth and fifth grades have not had the same problem, and the second grade is not following this pattern, the longitudinal data increasingly indicate that, as children progress through elementary school, TOP children are one-third to half as likely to be placed in special education as their non-TOP peers.

Figure 2

Percentage of Children from TOP and Control Groups Who Were in Special Education During the 2011-2012 School Year

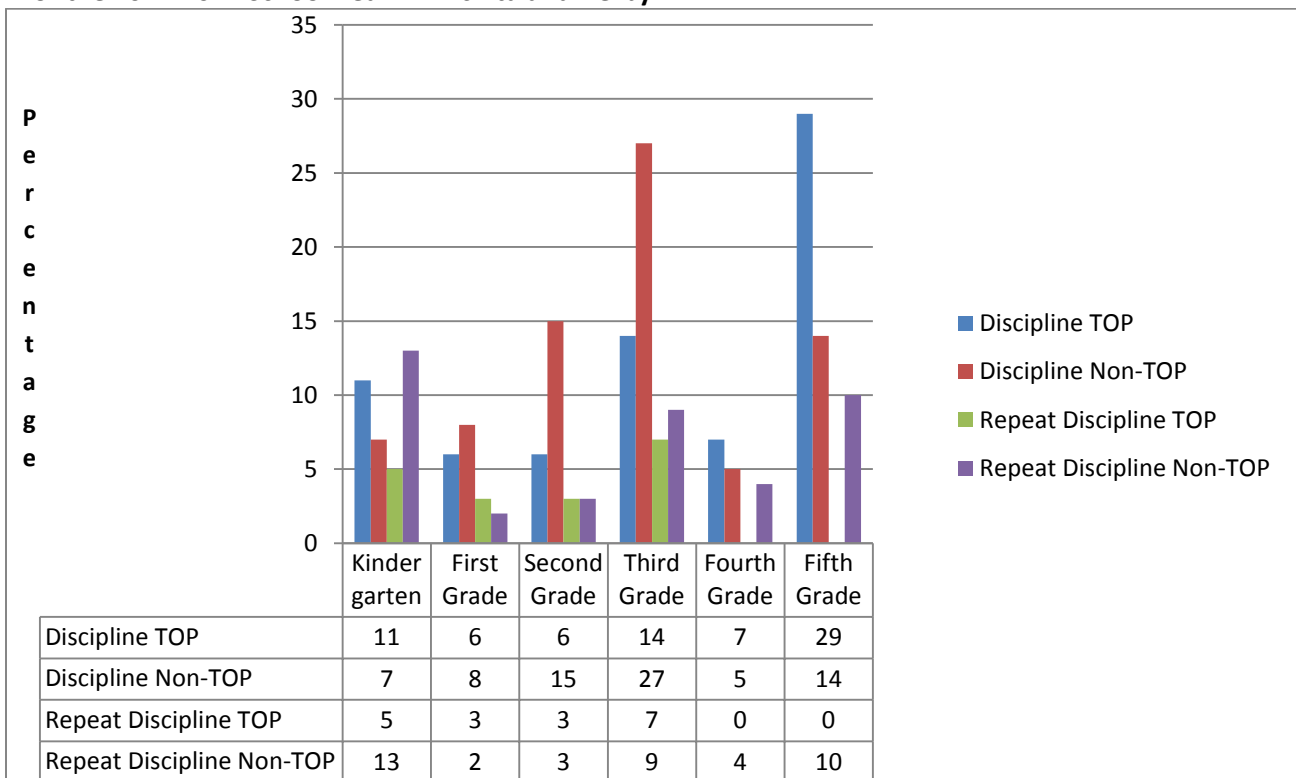


Discipline Referrals. We also asked about discipline-- if a child was referred to the office because of behavior problems and, if there were repeated discipline referrals for the same child.

Although it appears that TOP children were sent to the office as often as their non-TOP peers, this is usually not a reflection of behavior problems (it generally is a minor infraction of the rules), it is the repeat of the offense that signifies problems that the child has difficulty interacting appropriately in school. Figure 3 provides a graphic of the number of office referrals and the number of repeat discipline referrals. In most areas, it appears that TOP children behave appropriately more often than their non-TOP peers. The especially occurs with repeat discipline referrals (with the exception of the first grade group). In second grade, both groups have an even percentage of repeat discipline referrals; however, by the older (fourth and fifth) grades, the TOP children have no repeat discipline referrals.

Figure 3

Percentage of Children Who Were Reported for Discipline for TOP and Non-TOP Children. Single and Repeat Reports Shown for the 2011-2012 School Year in Wichita and Derby



Retention. Retention is reported for each school district separately this year because of how the data were received from the two school districts. Derby reported no grade retentions for TOP children and two retentions for the non-TOP group. Wichita provided data from the 2010-2011 school year and indicated that data for the 2011-2012 school year were not available currently. Table 7 provides the information regarding grade retention for the school districts.

Both school districts state that their policy is to refrain from retaining students. It seems that some of the schools and principals feel that individual students may benefit from repeating a grade; however, this does not appear to be part of district policy. Thus, grade retention is not very commonly used as a manner of helping student learning.

Table 8

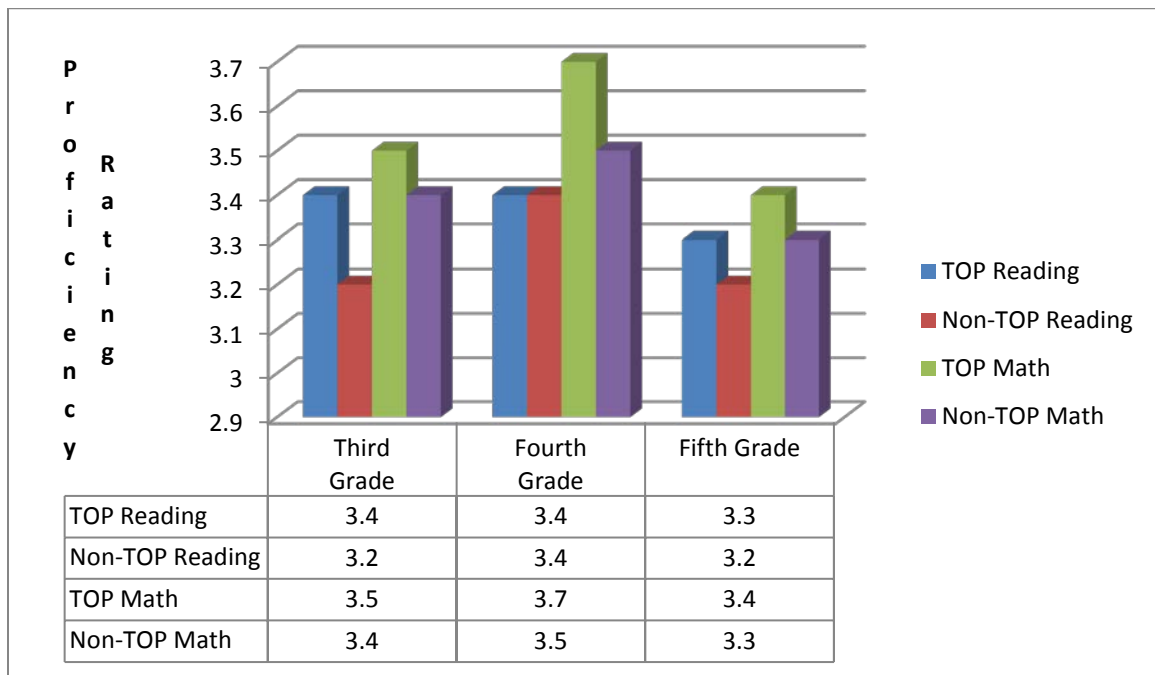
Percentage of Grade Retention for Derby for the 2011-2012 School Year and for Wichita for the 2010-2011 School Year

GRADE	DERBY 2011-2012 SCHOOL YEAR		WICHITA 2010-2011 SCHOOL YEAR	
	TOP %	Non-TOP %	TOP %	Non-TOP %
Kindergarten	0	0	4	0
First Grade	0	1	1	1
Second Grade	0	0	0	1
Third Grade	0	2	0	0
Fourth Grade	0	0	0	0
Fifth Grade	0	0	0	0

Standardized test scores. Starting with the third grade, schools administer state tests in several of the disciplines. For this study, we are concerned with test scores for reading and mathematics. We have test scores for the third, fourth, and fifth grades. One of the means the state reports the data from the tests is by proficiency ratings: 1 = Academic Warning; 2 = Approaching Standards; 3 = Meets Standards; 4 = Exceeds Standards; and 5 = Exemplary. Figure 4 provides a comparison of these proficiency ratings for the TOP and non-TOP groups for third, fourth, and fifth grade students. With the exception of fourth grade reading, the TOP students' proficiency ratings were greater than their non-TOP peers for all assessments.

Figure 4

Proficiency Ratings for TOP and Non-TOP Third, Fourth, and Fifth Grade Students in Reading and Math Standardized Test Scores



Another way to portray the levels of proficiency of students is a means of determining just what percent of students perform at each level of proficiency. These are displayed in Figure 5 for the TOP and the control sample of third, fourth, and fifth grade students in math, and Figure 6 displays the proficiency ratings for the same groups in reading. In looking at math scores, although both groups have a majority of students meeting and exceeding standards, it is addressing those not meeting standards wherein differences lie. With fifth grade students, no fifth grade TOP students score at Academic Warning (1), and only 14% do not meet standards (2) whereas the non-TOP students have 12% of students at Academic Warning (1) and another 8% not meeting standards (2). TOP fourth grade had only 8% of their students who did not meet standards whereas the non-TOP group had 19% of their students not meeting standards. And, although the third grade did not have as great a difference between the TOP and Control groups, the TOP students had a lower percentage of students who did not meet standards in math.

Figure 5 and 6

Graph Comparing Proficiency Ratings (in percentages) on State Standardized Tests in Mathematics and Reading for Third, Fourth, and Fifth Grade TOP Students, and a Non-TOP Control Sample in the Wichita and Derby School Districts for 2011-2012.

Figure 5

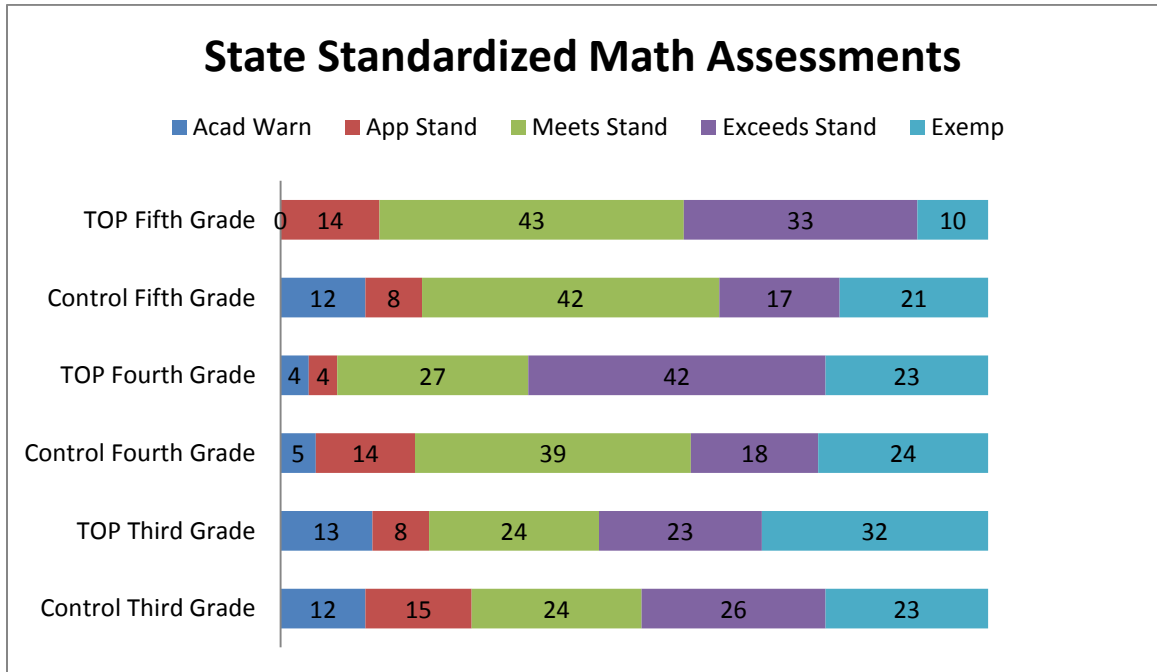
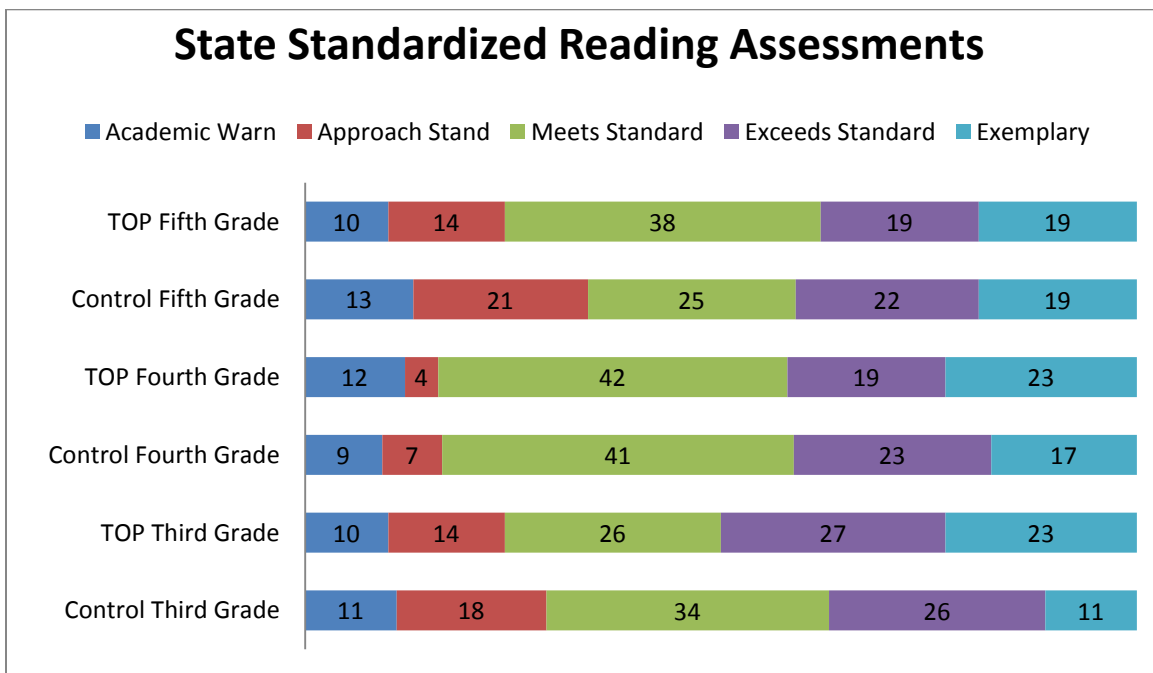


Figure 6



In terms of reading, the gap between the TOP and Control groups for third and fourth grades was not very great (although the TOP students had a lower percentage of students not meeting standards for both grades, in fifth grade, there was a substantial gap. The TOP fifth grade had about one-fourth of their students who did not meet standards in reading whereas the Control fifth grade had more than one-third of their students not meeting standards.

Conclusions

TOP Early Learning Centers stress social skills as a central aspect of their curriculum. It appears to have a long-lasting effect. *Behaviorally*, there is evidence that TOP children have learned this skill and use it appropriately about 75% of the time. Comparing TOP children to non-TOP students, teachers perceive TOP children to use significantly more appropriate behaviors than their non-TOP peers. As far as *competent social interactions*, more than half of the TOP children use competent social interactions 75% or more of the time and greater than 90% of them are competent more than half of the time. In comparing TOP children to their non-TOP peers, once again teachers perceive TOP children to have significantly more competent social interactions at all elementary grades. In terms of *emotional maturity*, about half of the children evidence emotional maturity 75% or more of the time, and by the second grade, more than 90% of the children act emotionally mature half of the time. In comparing TOP children with their non-TOP peers, teachers perceive TOP children are significantly more emotionally mature than the non-TOP students.

The demographic data also attest to the value of the TOP Early Learning Centers program – by third, fourth and fifth grades, we start seeing attendance differences in that TOP children are absent fewer times than their non-TOP peers. In special education placements, whereas TOP children have a higher placement rating in the early grades (kindergarten and first grade), by second grade, TOP special education placement ratings decrease greatly (with the anomaly of the third grade cohort). It seems as if early identification of special needs may be beneficial in treating the placement of TOP children, most of whom are placed for speech and language. Discipline is another area wherein TOP children seem to thrive longitudinally. The fourth and fifth grade children have no repeat discipline referrals, and in most grades, the TOP children have a lower percentage of discipline referrals overall. Grade retention is a difficult area to assess. Both school systems have a policy of not retaining students, and although we have found cases of students who have been kept in a grade, the schools have not been able to provide us with a policy to explain these situations. The last area we addressed demographically was that of standardized testing. For the purposes of this study, we address the disciplines of math and reading. TOP students have higher math and reading scores in third, fourth, and fifth grades. One way of comparing these scores is looking at the percentage of students in both groups who do not meet standards in the two disciplines. For all three grades, for both math and reading, the TOP group had a lower percentage of students who failed to meet standards.

After five years of data collection, there is increasing support that the TOP Early Learning Centers program provides a curriculum that teaches lasting social skills and prepares students for later in life. Teachers in the different grades comment frequently on their delight with teaching the TOP students. They also indicate that they often can tell

TOP children by their social skills; these skills, according to the teachers, help with readiness for learning. We have growing evidence to answer our question that high-quality early education creates improved life outcomes for children living in poverty.

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