Abell Evaluation

The Baltimore KIPP Ujima Village Academy, 2002-2006: A Longitudinal Analysis of Student Outcomes

Martha Abele Mac Iver and Elizabeth Farley-Ripple
The Center for Social Organization of Schools
Johns Hopkins University

Prepared For
The Abell Foundation
111 S. Calvert Street, Suite 2300
Baltimore, Maryland 21202
www.abell.org

JUNE 2007

Introduction

KIPP Ujima Village Academy is a member of the KIPP (Knowledge is Power) National Network of schools. The Baltimore KIPP serves approximately 300 students in Northwest Baltimore in grades 5-8; the school opened in Fall 2002 and converted to a charter school in 2005.

The Baltimore KIPP Ujima Village Academy, 2002-2006: A Longitudinal Analysis of Student Outcomes

Executive Summary

This study analyzes four cohorts of 5th grade students in the Baltimore City Public School System (BCPSS) from 2002-03, 2003-04, 2004-05, and 2005-06. The primary group of interest is 5th grade students at the BCPSS KIPP school for each of these cohort years. We then use data available from BCPSS to describe and trace the trajectory of these KIPP students over time, compared to 5th grade cohort groups from the feeder KIPP schools in each cohort year (defined as those 4th graders the prior year who were promoted to 5th grade as each KIPP cohort began 5th grade). Major findings were:

- KIPP students were less likely to have special education status than their feeder school comparison group. Otherwise, they were demographically similar (except for two cohorts in which KIPP had a higher proportion of females).

- The first and fourth cohort of KIPP students (5th graders in 2002-03 and 2005-06) did not differ significantly from their feeder school comparison group in prior 4th grade achievement. KIPP students had significantly higher mathematics scores than the comparison group in Cohorts 2 and 3, and also significantly higher reading scores than the comparison group in Cohort 2. (The impact of students who entered KIPP from outside BCPSS and thus had no prior achievement scores cannot be measured in these analyses.)

- Even when pre-existing differences between KIPP and comparison students are controlled in statistical analyses, KIPP students generally outperformed comparison school students on achievement measures. In particular:

    - KIPP students significantly outperformed their feeder school comparison group in 5th grade mathematics every year (even controlling for higher prior achievement in math). But KIPP students did not outperform their feeder school comparison group in 5th grade reading achievement.

    - In grades 6 to 8, when most of the comparison group students attended large middle schools, KIPP students outperformed comparison students in reading and in math. In most cases, the KIPP effect was significantly positive even when students who had transferred out of KIPP and were still at the on-time grade level were included in the analyses as "ever KIPP" students. The necessary exclusion of retained students from test score analyses may have an unmeasured impact on these reported results.

- Attrition from the KIPP program was not trivial, and students who left KIPP had lower test scores than those who stayed at KIPP. Attrition was also generally higher among

males than females. KIPP students had significantly lower on-time promotion rates in Cohorts 2 and 3 than comparison group students, but there was no difference in Cohort 1.

Though KIPP and comparison students were similar in 4th grade achievement and attendance, as well as on demographic variables, it is important to note that it was not possible to measure other important differences between KIPP and comparison students. In particular, differences in family support variables (parental education, amount of parental interaction with students on academic and other activities, etc.) could not be measured, and could contribute significantly to the later achievement differences between the groups.

It is likely that several components of the KIPP program contributed to higher student achievement: the longer school day and other additional hours of instruction, high quality curriculum and instruction (especially in mathematics), and positive school climate (facilitated by smaller numbers of students than in comparison students' schools, fewer behavioral problems, etc.). Scaling up these components throughout the district is an attractive proposal, but would likely be very costly. It is also important not to ignore the attrition from the KIPP program, as well as the relatively higher retention in grade rates for KIPP students. Assuring that a KIPP model could succeed on a large scale and sustain such high rates of achievement would be an extremely challenging task. Qualitative studies that probe into reasons for the attrition among KIPP students would be a useful research contribution as district policymakers make decisions on expanding the number of KIPP schools.

It is possible that keeping middle grades students in smaller learning environments (newly converted K-8 schools rather than middle schools) will address the school climate issue, but the primary challenge is to find ways to ensure high quality instruction in every classroom, every day. In addition, more ways of providing extra help for struggling students need to be incorporated into district- and school-level planning of instructional delivery. The KIPP Ujima Village Academy in Baltimore has shown that high quality instruction and extra learning time in a positive school environment does make a difference in student achievement. The challenge is to find ways to make this a reality for most urban students, rather than for just a few.

The Baltimore KIPP Ujima Village Academy, 2002-2006: A Longitudinal Analysis of Student Outcomes

Background

Low academic performance by students in urban middle schools has led to a variety of reform efforts, including the creation of new K-8 schools (returning to an earlier model of schooling in the U.S.) as well as charter-type schools serving middle grades students. The Baltimore City Public School System (BCPSS), like other large city school districts, has explored both of these options recently. Under the district's "New Schools Initiative," several new schools serving middle grades students have been created. A recent Abell Foundation report (2006) notes in particular the high levels of academic achievement of students at the KIPP (Knowledge is Power Program) Ujima Village Academy, compared to students at city middle schools and K-8 schools.

Created in 1994 by two former Teach for America teachers, the Knowledge Is Power Program (KIPP) began with a fifth grade program in Houston, expanded next to New York City, and as of spring 2007 included 52 schools in 16 states and the District of Columbia serving 12,000 students. KIPP schools have primarily enrolled underserved urban minority students (63% African American, 33% Hispanic) in grades 5 to 8, though the program has now expanded into rural areas and both elementary and high school gradespans. While principals at each KIPP school are free to select or design their own curriculum, a standard feature across all KIPP schools is the increased learning time (extended day, alternate Saturdays, and three weeks of summer school), characterized by KIPP leaders as "60% more than average public school students" (KIPP, 2007).

Besides numerous journalistic articles praising the KIPP program (e.g., Choi, 2003; Izumi, 2004), several recent reports have analyzed achievement outcomes for students at KIPP schools. A KIPP-commissioned study conducted by the Educational Policy Institute (2005) found large NCE gains on the Stanford Achievement Test (SAT 9/10) for 5th graders at 24 KIPP schools in mathematics, as well as somewhat smaller gains in language and reading. In addition, several independent evaluation reports have noted positive achievement effects for KIPP schools. Only one study thus far uses longitudinal student level data for both KIPP and comparison group students (Gallagher & Rossi, 2005), finding stronger effects for math than reading and English language arts in 5th grade and nearly equal effect sizes for all subjects in 6th grade. This longitudinal study of Memphis students noted that while both KIPP and comparison lost NCE points between 5th and 6th grade (about equally) in reading and math, KIPP students still outperformed the matched comparison group. Other studies of KIPP in Houston, North Caroline, and District of Columbia (Doran & Drury, 2002), San Francisco (David et al., 2005), and Denver (Anderson & DeCesare, 2006) also found positive achievement effects of the KIPP program, though their authors noted weaknesses in their methodologies (lack of control groups or ability to assess achievement growth over time) that limited the conclusions they were able to draw.

The need to investigate attrition and in-grade retention patterns is an issue that KIPP acknowledges (KIPP, 2007). As David et al. (2006, p. 63) note: "In-grade retention and attrition data from two KIPP schools indicate that their student cohorts change significantly from year to year," and these evaluators highlight the need to determine whether there are systematic patterns in attrition (particularly loss of lower-achieving and/or poorly behaved students). While observers have made claims in internet blog (San Francisco Schools Blog, 2007) regarding attrition at KIPP schools, this issue requires more systematic study.

The following research study examines four cohorts of KIPP students in Baltimore, together with a comparison groups from the same feeder elementary schools as each KIPP cohort. In particular, this research study addresses whether there were pre-existing differences between KIPP students and other BCPSS students that could help to explain the higher academic achievement levels of the KIPP school compared to other schools in aggregate level analyses. In addition, this research study focuses on issues such as attrition (and new student replacement) at the KIPP school. We systematically compare academic achievement outcomes of KIPP students with students at the same grade level at other types of schools.

Study Research Questions and Methodology

We identify four cohorts of 5th grade students in the Baltimore City Public School System (BCPSS) from 2002-03, 2003-04, 2004-05, and 2005-06. The primary group of interest is 5th grade students at the BCPSS KIPP Ujima Village Academy for each of these cohort years. (The school began with a cohort of 5th graders in 2002-03 and added a grade a year through 8th grade in 2005-06.) We then use data available from BCPSS to describe and trace the trajectory of these KIPP students over time, compared to 5th grade cohort groups from the feeder KIPP elementary schools in each cohort year (defined as those 4th graders the prior year who were promoted to 5th grade as each KIPP cohort began 5th grade). We show the group of cohorts and their progression over time schematically in Figure 1.

Figure 1. Cohort Progression Over Time

	2002-2003	2003-2004	2004-2005	2005-2006
	Grade	Grade	Grade	Grade
Cohort 1	**5**	**6**	**7**	**8**
Cohort 2		**5**	**6**	**7**
Cohort 3			**5**	**6**
Cohort 4				**5**

In particular, we define each 5th grade cohort as those students enrolled in KIPP on September 30th of the 5th grade year (excluding those who transfer out before September 30, including those who transfer in by September 30). We then divide this group each year into those who stayed all year, and those who transferred out of KIPP before the end of the year. In addition, we construct a group of students who transferred into KIPP (5th graders after September 30 and 6th graders) for comparative analysis. We then compare characteristics (demographic, prior school achievement and attendance) and outcomes (promotion to next grade, attendance, test scores) for these groups of students using variable-appropriate statistical tests to determine whether differences between the groups are statistically significant.

All analyses with Maryland School Assessment (MSA) test score data are conducted only with students at the same grade level and for those students promoted on the regular schedule (necessarily excluding retained students from test score data analyses). In addition, all comparisons using MSA scale score data are made only for the same testing year; no cross-year comparisons can be made due to the design and construction of the MSA tests (CTB/McGraw-Hill, 2006).

Characteristics of KIPP Students

Previous School

Eligibility for enrollment in Baltimore's KIPP Ujima Village Academy is linked to having an address zoned to particular feeder elementary schools in Northwest Baltimore.[1] Figure 2 summarizes the distribution of 4th grade feeder schools for each of the 5th grade cohorts. While the large majority of students each year came from the designated feeder elementary schools in the geographic area that KIPP serves, each year there were also students in the original 5th grade cohort whose last 4th grade school was not one of the feeder elementary schools (from which the comparison group for this study was composed). One likely explanation is that these students had an address change that then made them eligible to enroll in KIPP. In the 2002-03 cohort of 5th graders, all 4 students who were not from the feeder elementary schools were from outside BCPSS (did not attend a BCPSS school in 2001-02). Each of the subsequent 5th grade cohorts included students from other (non-feeder) BCPSS schools as well outside the district.[2] The percentage of non-feeder students ranged from 5% to 15%, depending on the year. Another notable pattern in these data is the higher concentration in later cohorts of students from schools with lower poverty rates (see Appendix A). In particular, Cross Country Elementary, a non-Title I school, sent more students for KIPP's 2004-05 5th grade cohort than any other feeder elementary did.

[1] See Appendix A for a summary of how the list of elementary feeder schools changed over time.
[2] Two students in Cohort 2 and one in Cohort 4 had previously attended a KIPP feeder school even though their last school before KIPP was a non-feeder.

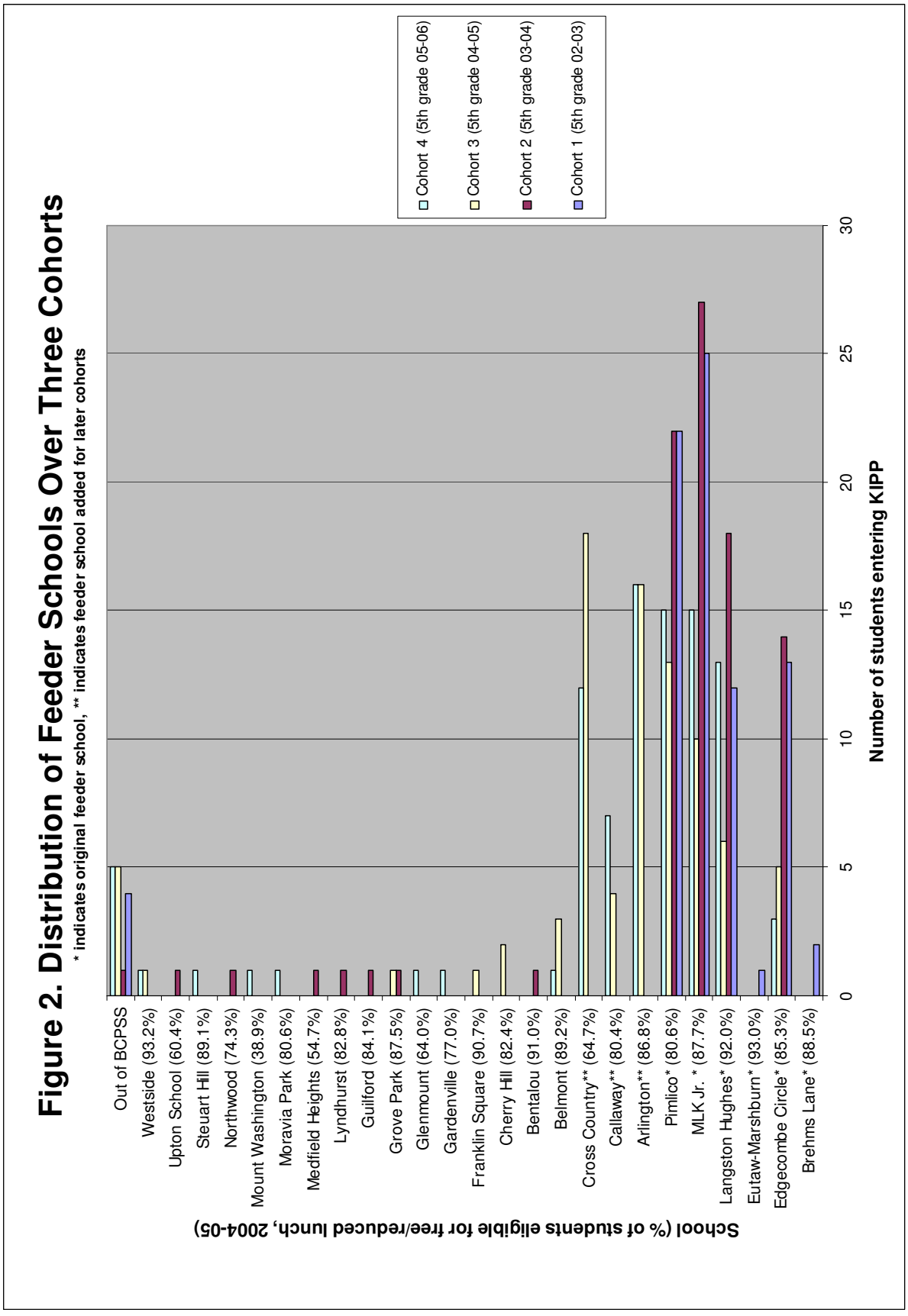


Figure 2. Distribution of Feeder Schools Over Three Cohorts
* indicates original feeder school, ** indicates feeder school added for later cohorts
Cohort 4 (5th grade 05-06)
Cohort 3 (5th grade 04-05)
Cohort 2 (5th grade 03-04)
Cohort 1 (5th grade 02-03)
School (% of students eligible for free/reduced lunch, 2004-05)
Out of BCPSS
Westside (93.2%)
Upton School (60.4%)
Steuart Hill (89.1%)
Northwood (74.3%)
Mount Washington (38.9%)
Moravia Park (80.6%)
Medfield Heights (54.7%)
Lyndhurst (82.8%)
Guilford (84.1%)
Grove Park (87.5%)
Glenmount (64.0%)
Gardenville (77.0%)
Franklin Square (90.7%)
Cherry Hill (82.4%)
Bentalou (91.0%)
Belmont (89.2%)
Cross Country** (64.7%)
Callaway** (80.4%)
Arlington** (86.8%)
Pimlico* (80.6%)
MLK Jr. * (87.7%)
Langston Hughes* (92.0%)
Eutaw-Marshburn* (93.0%)
Edgecombe Circle* (85.3%)
Brehms Lane* (88.5%)
0
5
10
15
20
25
30
Number of students entering KIPP

Demographic Characteristics

Table 1 summarizes demographic characteristics for the original KIPP students in each cohort with comparison students from the designated feeder elementary schools[3] who were also promoted to 5th grade. As the table illustrates, KIPP students did not differ notably from comparison students in race or free lunch status. KIPP had a higher proportion of female students than the comparison group in two of the cohorts, but a lower proportion in the last cohort. The KIPP cohorts differed most from comparison cohorts in the lower proportion of special education students (though this number grew over time in the original cohort groups).

Prior Academic Characteristics

As Table 1 indicates, KIPP students had only slightly higher prior (4th grade) attendance rates than comparison students. The first and fourth cohorts of KIPP students (5th graders in 2002-03 and 2005-06) did not differ significantly from their feeder school comparison group in prior 4th grade achievement. KIPP students had significantly higher 4th grade mathematics scores than the comparison group in Cohorts 2 and 3, and also significantly higher 4th grade reading scores than the comparison group in Cohort 2 (see Table 2). The impact of students who entered KIPP from outside BCPSS and thus had no prior achievement scores cannot be measured in these analyses.

Table 1. Summary of Demographic Characteristics and Prior Attendance for KIPP and Comparison Students

	Cohort 1 5th grade 2002-03		**Cohort 2 5th grade 2003-04**		**Cohort 3 5th grade 2004-05**		**Cohort 4 5th grade 2005-06**	
	Original KIPP Cohort	Comparison Group	Original KIPP Cohort	Comparison Group	Original KIPP Cohort	Comparison Group	Original KIPP Cohort	Comparison Group
% Female	49.4%	48.0%	59.6%	50.8%	54.1%	50.6%	46.6%	50.1%
% Special Ed	**5.3%**	**15.0%**	**5.7%**	**16.1%**	8.8%	14.9%	12.5%	17.6%
% FRL	89.9%	84.0%	93.0%	90.2%	82.4%	86.1%	89.8%	87.9%
% African-American	100%	99.4%	100%	99.3%	100%	97.9%	97.7%	98.5%
4th grade attendance	96.0%	94.4%	94.9%	93.6%	96.8%	94.1%	96.4%	95.5%

Note: Statistically significant differences ($p < .05$) indicated in bold font.

[3] See Appendix A for information on which feeder school students were included in the comparison group for each cohort.

Table 2. Summary of Prior (4th grade) Achievement Scores for KIPP and Comparison Students

	Cohort 1 5th grade 2002-03		Cohort 2 5th grade 2003-04		Cohort 3 5th grade 2004-05		Cohort 4 5th grade 2005-06	
	Original KIPP Cohort	Comparison Group	Original KIPP Cohort	Comparison Group	Original KIPP Cohort	Comparison Group	Original KIPP Cohort	Comparison Group
Reading	45.7	44.2	**49.7**	**42.6**	385.8	380.7	388.8	379.4
Math	47.9	46.3	**52.3**	**45.6**	**385.1**	**370.0**	387.0	377.2

Note: Statistically significant differences (p <.05) indicated in bold font.
Note: Figures for Cohorts 1 and 2 based on average NCE score on the Terra Nova.
Note: Figures for Cohorts 3 and 4 based on average scale scores on the MSA.

Outcomes for KIPP Students

Attendance

KIPP students had higher average fifth grade attendance rates than comparison students (see Table 3). As comparison students transitioned primarily to middle schools in grade 6,[4] their attendance rates declined and the gap between KIPP and comparison students grew wider.[5] KIPP student attendance also declined slightly as students moved into the middle grades (6-8), but not as dramatically as for comparison students. KIPP student attendance did not dip below 93%, while the attendance rate for comparison school students in the middle grades ranged from 85-89%.

Table 3. Summary of Attendance Outcomes for KIPP and Comparison Students

	Cohort 1 5th grade 2002-03		Cohort 2 5th grade 2003-04		Cohort 3 5th grade 2004-05		Cohort 4 5th grade 2005-06	
	Original KIPP Cohort	Comparison Group	Original KIPP Cohort	Comparison Group	Original KIPP Cohort	Comparison Group	Original KIPP Cohort	Comparison Group
Year 1 (5th)	**99.6**	**94.0**	**94.7**	**93.8**	**97.0**	**94.3**	96.2	95.2
Year 2 (on time 6th)	**96.4**	**86.8**	**96.9**	**85.1**	**96.9**	**89.7**		
Year 3 (on time 7th)	**96.3**	**85.5**	**93.8**	**85.7**				
Year 4 (on time 8th)	**96.6**	**85.7**						

Note: Statistically significant differences (p <.05) indicated in bold font.

[4] See Appendix B for a chart summarizing the middle grade schools attended by comparison group students in 6th grade.
[5] Transportation by the district (yellow school bus) was provided for KIPP students but not for regular education comparison students.

Achievement Scores

Tables 4 to 7 present average scores on the Maryland School Assessment (MSA) for KIPP and comparison school students in each cohort who were promoted on schedule. We distinguish between two KIPP student categories: KIPP students who stayed all year at each grade level, and students who left during a particular year and grade level.[6] We also present average results for the group of students who transferred into KIPP each particular year (5th and 6th grades).

[6] N's for students leaving KIPP in Tables 4 to 7 do not necessarily match N's in Figures 3 to 6 (depicting attrition) because they represent those students on grade level for whom test scores were available.

Table 4.1 Cohort 1 MSA Math Scores by KIPP Groups and Comparison Group

			Original KIPP Cohort							
			Stayed at KIPP all year	N	Left KIPP that year	N	Transferred into KIPP	N	Regularly promoted comparison group	N
S03	**5th grade**	**Avg. Score**	402.1	69	326.7	9	420.0	5	361.9	432
		% proficient or above	65.2%	69	30.0%	9	60.0%	5	25.9%	432
S04	**6th grade**	**Avg. Score**	405.0	62	379.3	4	294.5	2	350.1	379
		% proficient or above	83.9%	62	25.0%	4	0.0%	2	16.1%	379
S05	**7th grade**	**Avg. Score**	399.5	57	326.5	2	NA	0	341.1	335
		% proficient or above	50.9%	57	50.0%	2	NA	0	12.5%	335
S06	**8th grade**	**Avg. Score**	451.9	40	409.2	5	NA	0	369.6	299
		% proficient or above	100.0%	40	80.0%	5	NA	0	19.4%	299

Table 4.2 Cohort 1 MSA Reading Scores by KIPP Groups and Comparison Group

			Original KIPP Cohort							
			Stayed at KIPP all year	N	Left KIPP that year	N	Transferred into KIPP	N	Regularly promoted comparison group	N
S03	**5th grade**	**Avg. Score**	408.3	69	369.0	9	384.2	5	396.5	432
		% proficient or above	53.6%	69	10.0%	9	40.0%	5	41.9%	432
S04	**6th grade**	**Avg. Score**	385.8	62	373.3	4	301.0	2	371.3	381
		% proficient or above	65.6%	62	25.0%	4	0.0%	2	43.6%	381
S05	**7th grade**	**Avg. Score**	399.4	57	345.0	2	NA	0	365.2	335
		% proficient or above	71.9%	57	50.0%	2	NA	0	32.5%	335
S06	**8th grade**	**Avg. Score**	403.9	40	395.5	5	NA	0	377.7	303
		% proficient or above	77.5%	40	60.0%	5	NA	0	35.0%	303

Table 5.1 Cohort 2 MSA Math Scores by KIPP Groups and Comparison Group

			Original KIPP Cohort							
			Stayed at KIPP all year	N	Left KIPP that year	N	Transferred into KIPP	N	Regularly promoted comparison group	N
S04	**5th grade**	**Avg. Score**	430.4	73	373.1	15	399.5	2	373.2	416
		% proficient or above	93.2%	73	33.3%	15	50.0%	2	34.9%	416
S05	**6th grade**	**Avg. Score**	417.9	60	353.8	4	411.0	24	352.7	360
		% proficient or above	90.0%	60	50.0%	4	87.5%	24	17.2%	360
S06	**7th grade**	**Avg. Score**	446.8	43	408.3	9	NA	0	347.2	310
		% proficient or above	97.7%	43	88.9%	9	NA	0	17.4%	310

Table 5.2 Cohort 2 MSA Reading Scores by KIPP Groups and Comparison Group

			Original KIPP Cohort							
			Stayed at KIPP all year	N	Left KIPP that year	N	Transferred into KIPP	N	Regularly promoted comparison group	N
S04	**5th grade**	**Avg. Score**	394.2	73	369.0	15	387.0	2	380.4	417
		% proficient or above	56.2%	73	26.7%	15	50.0%	2	42.9%	417
S05	**6th grade**	**Avg. Score**	403.0	60	378.5	4	413.5	24	367.3	359
		% proficient or above	78.3%	60	50.0%	4	91.7%	24	33.7%	359
S06	**7th grade**	**Avg. Score**	411.7	43	395.9	9	NA	0	369.6	307
		% proficient or above	81.4%	43	55.6%	9	NA	0	32.9%	307

Table 6.1 Cohort 3 MSA Math Scores by KIPP Groups and Comparison Group

			Original KIPP Cohort							
			Stayed at KIPP all year	N	Left KIPP that year	N	Transferred into KIPP	N	Regularly promoted comparison group	N
S05	**5th grade**	**Avg. Score**	430.6	83	334.5	2	406	4	390.1	476
		% proficient or above	94.0%	83	50.0%	2	50.0%	4	54.2%	476
S06	**6th grade**	**Avg. Score**	425.8	61	348.0	8	430.3	18	366.9	414
		% proficient or above	91.8%	61	0.0%	8	94.4%	18	34.0%	414

Table 6.2 Cohort 3 MSA Reading Scores by KIPP Groups and Comparison Group

			Original KIPP Cohort							
			Stayed at KIPP all year	N	Left KIPP that year	N	Transferred into KIPP	N	Regularly promoted comparison group	N
S05	**5th grade**	**Avg. Score**	398.4	83	349.0	2	375.5	4	392.5	476
		% proficient or above	67.5%	83	50.0%	2	25.00%	4	64.3%	476
S06	**6th grade**	**Avg. Score**	407.7	61	375.1	8	415.7	18	376.8	415
		% proficient or above	91.2%	61	50.0%	8	94.40%	18	45.5%	415

Table 7.1 Cohort 4 MSA Math Scores by KIPP Groups and Comparison Group

			Original KIPP Cohort							
			Stayed at KIPP all year	N	Left KIPP that year	N	Transferred into KIPP	N	Regularly promoted comparison group	N
S06	5th grade	Avg. Score	413.2	74	383.5	16	NA		395.9	361
		% proficient or above	75.7%	74	43.8%	16	NA		57.6%	361

Table 7.2 Cohort 4 MSA Reading Scores by KIPP Groups and Comparison Group

			Original KIPP Cohort							
			Stayed at KIPP all year	N	Left KIPP that year	N	Transferred into KIPP	N	Regularly promoted comparison group	N
S06	5th grade	Avg. Score	392.2	74	380.7	16	NA		394.3	362
		% proficient or above	64.9%	74	43.8%	16	NA		60.5%	362

Because of some pre-existing differences between KIPP and comparison students in some cohorts, we conducted multivariate analyses[7] for each cohort/grade level that controlled for 4th grade test score, gender, and special education status. Analyses used two different versions of the KIPP treatment variable: a stringent "intent to treat" variable that coded all students who were enrolled at KIPP as of September 30 of the 5th grade year as KIPP students (even though they may have transferred out of KIPP soon afterwards); and a more nuanced (and less stringent) variable that measured whether or not the student finished that particular school year at KIPP. Table 8 summarizes the results of these analyses, indicating whether or not a significant effect of KIPP treatment was found for each cohort and grade level. (See Appendix C for full regression analysis results.) Even taking into account some pre-existing differences between KIPP and comparison students, analyses showed that KIPP students generally outperformed comparison school students on achievement measures. In particular:

- KIPP students significantly outperformed their feeder school comparison group in 5th grade mathematics every year (even controlling for higher prior achievement in math). But KIPP students did not outperform their feeder school comparison group in 5th grade reading achievement.

- In grades 6 to 8, when most of the comparison group students attended large middle schools, KIPP students outperformed comparison students in reading and in math. In most cases, the KIPP effect was significantly positive even when students who had transferred out of KIPP and were still at the on-time grade level were included in the analyses as "ever KIPP" students. The necessary exclusion of retained students from test score analyses may have an unmeasured impact on these reported results.

Table 8. KIPP and Comparison Group Cohort Achievement Summary[8]

	Cohort 1 5th grade 2002-03		**Cohort 2 5th grade 2003-04**		**Cohort 3 5th grade 2004-05**		**Cohort 4 5th grade 2005-06**	
	Read	**Math**	**Read**	**Math**	**Read**	**Math**	**Read**	**Math**
4th grade prior	No Difference	No Difference	KIPP Higher	KIPP Higher	No Difference	KIPP Higher	No Difference	No Difference
5th grade	No Difference	KIPP Higher	No Difference	KIPP Higher	No Difference	KIPP Higher	KIPP Lower**	KIPP Higher
6th grade	KIPP Higher (excl. drops)	KIPP Higher	KIPP Higher	KIPP Higher	KIPP Higher	KIPP Higher		
7th grade	KIPP Higher	KIPP Higher	KIPP Higher	KIPP Higher				
8th grade	KIPP Higher	KIPP Higher						

[7] We used ordinary least squares regression in these analyses. Even though students were clustered in schools, particularly in 5th grade, the number of 5th grade schools was too small for hierarchical linear models, and in grades 6 to 8 the comparison students were scattered sparsely (n=1 or n=2) in many different schools (though there were a couple of concentrations at two large middle schools).

Achievement Growth in Cohort 1

The available achievement measures allow analyses of achievement growth only for the first KIPP cohort from spring of the prior 4th grade year to spring of the 5th grade year (2002 and 2003). These analyses analyze growth on the CTBS/5 Terra Nova between 4th and 5th grades for KIPP and comparison group students. Table 9 summarizes normal curve equivalent (NCE) gains for students with scores in both years for both reading and math.

On average, KIPP students gained 24 NCE points on the Terra Nova math composite score between spring of 4th grade and spring of 5th grade (one year in KIPP school), compared to 0.7 NCE points for the comparison group (most of whom remained in the KIPP feeder elementary schools). KIPP students gained slightly more in computation (24.8 NCEs) than in math concepts (17.1 NCEs). By contrast, there was no significant difference between KIPP students and comparison students on reading growth between 4th and 5th grade. On average, KIPP students lost 0.8 NCEs, while comparison students gained 1.0 NCEs during that year. When reading scores are decomposed KIPP students gained 4.3 NCEs in reading comprehension and lost 4.0 NCEs in vocabulary, while comparison students gained about 1 NCE on each subtest.

Table 9. Summary of 4th to 5th Grade NCE Achievement Growth for KIPP and Comparison Students

	Reading Composite	Vocabulary	Reading Comprehension	Math Composite	Computation	Math Concepts
KIPP students	0.-8	-4.0	4.3	24.0	24.8	17.1
Comparison group	1.0	1.2	1.2	0.7	1.2	-0.1

Attrition

Analyses indicate non-trivial levels of attrition among the original KIPP cohorts, occurring not only during the 5th grade year but in subsequent years as well. Figures 3 to 6 summarize the patterns of attrition (and partial replacement) for each of the four cohorts. Figure 7 depicts attrition and retention outcomes overall. There was a slight tendency for attrition to be higher among males than females (Figure 8).

[8] Note: 4th grade prior achievement results based on analysis of variance results; 5th and higher grade effects based on regression analyses of test scores (including only students in the on-time grade level), controlling for 4th grade prior achievement, gender, and special education status. Except where noted, the "KIPP higher" results are based on the most stringent test (including all students ever in KIPP with those who had transferred out of KIPP). The "no difference" or "KIPP lower" results included only those KIPP students who remained until the end of the year.

** Students leaving KIPP during 05-06 scored significantly lower than comparison group on MSA reading that year. KIPP stayers had a lower score than comparison group, but not quite significant (p=.07). Analyzed together, KIPP students scored significantly worse than the comparison group

Figure 3. Cohort 1: 2002-03 through 2005-06

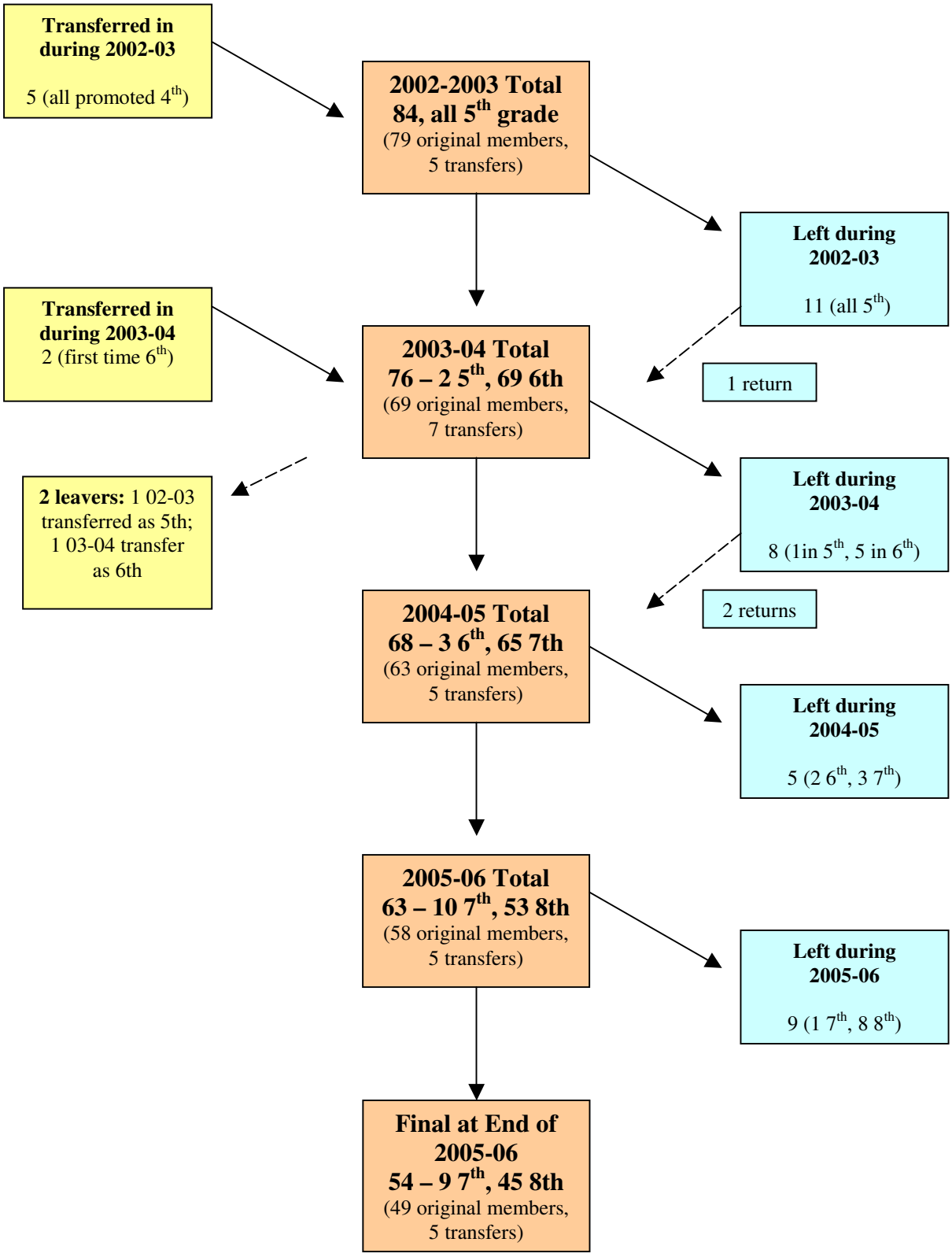
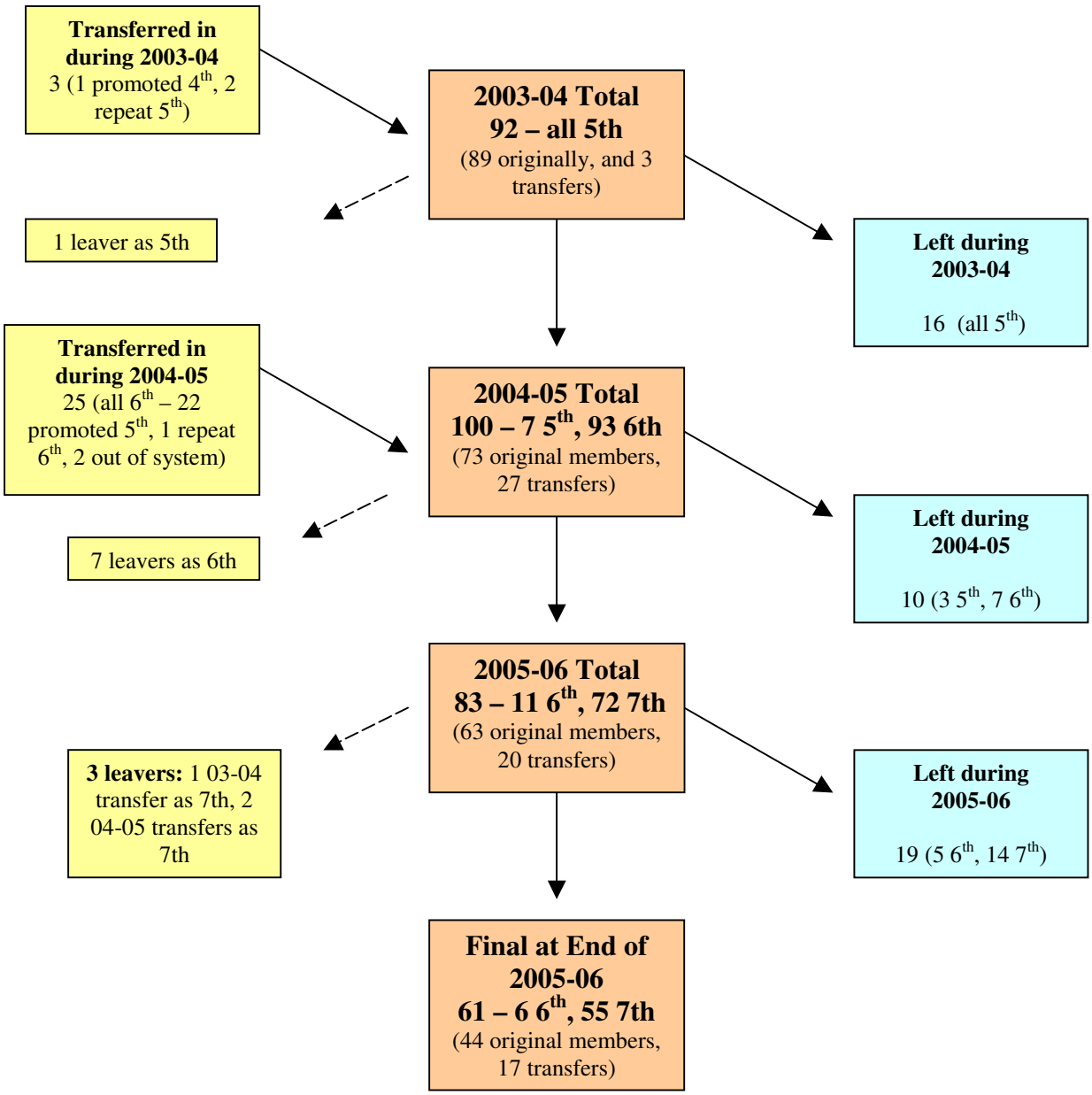


Figure 4. Cohort 2: 2003-04 through 2005-06[9]



[9] In Figures 3-5, students coded as leaving during a particular year did not have a BCPSS transfer or withdrawal code during the previous year, but may have left KIPP prior to the beginning of the school year in which they were coded as leaving.

Figure 5. Cohort 3: 2004-05 through 2005-06

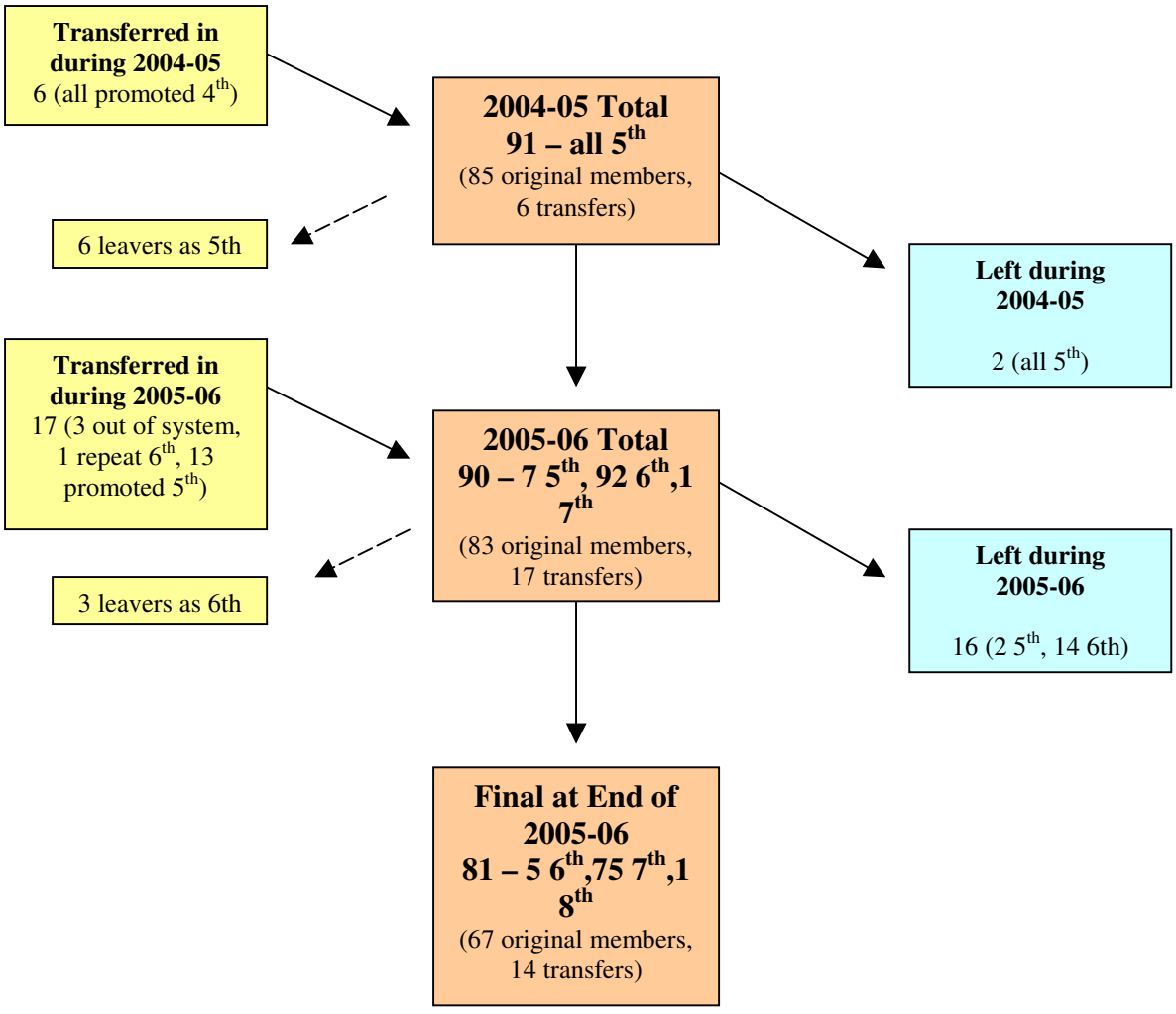


Figure 6. Cohort 4: 2005-2006

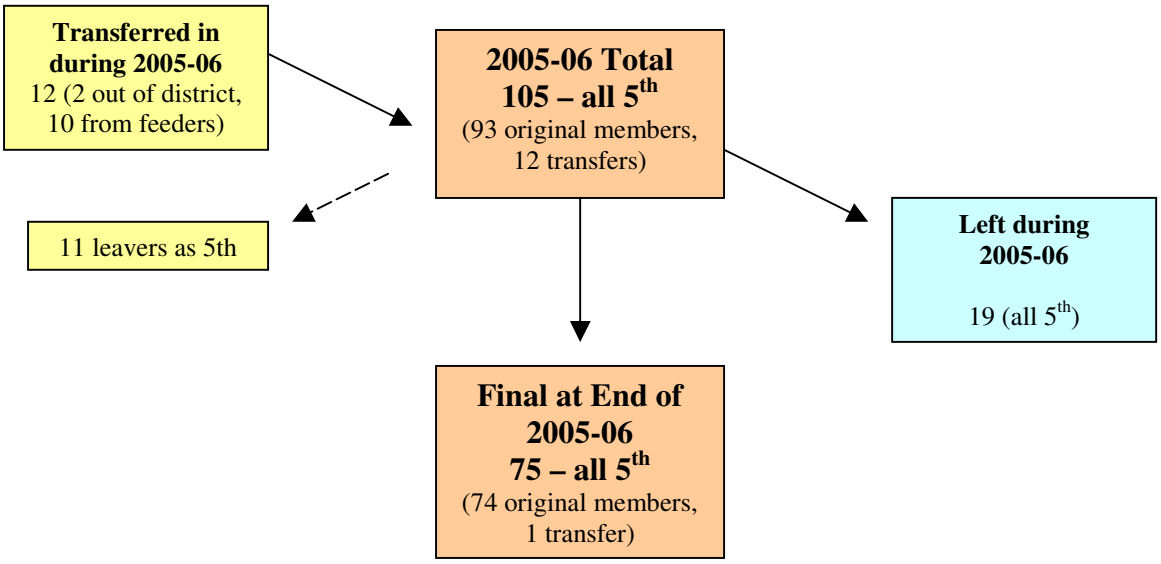


Figure 7. Summary of Attrition and Retention in Four BCPSS KIPP Cohorts (2002-03 to 2005-06)

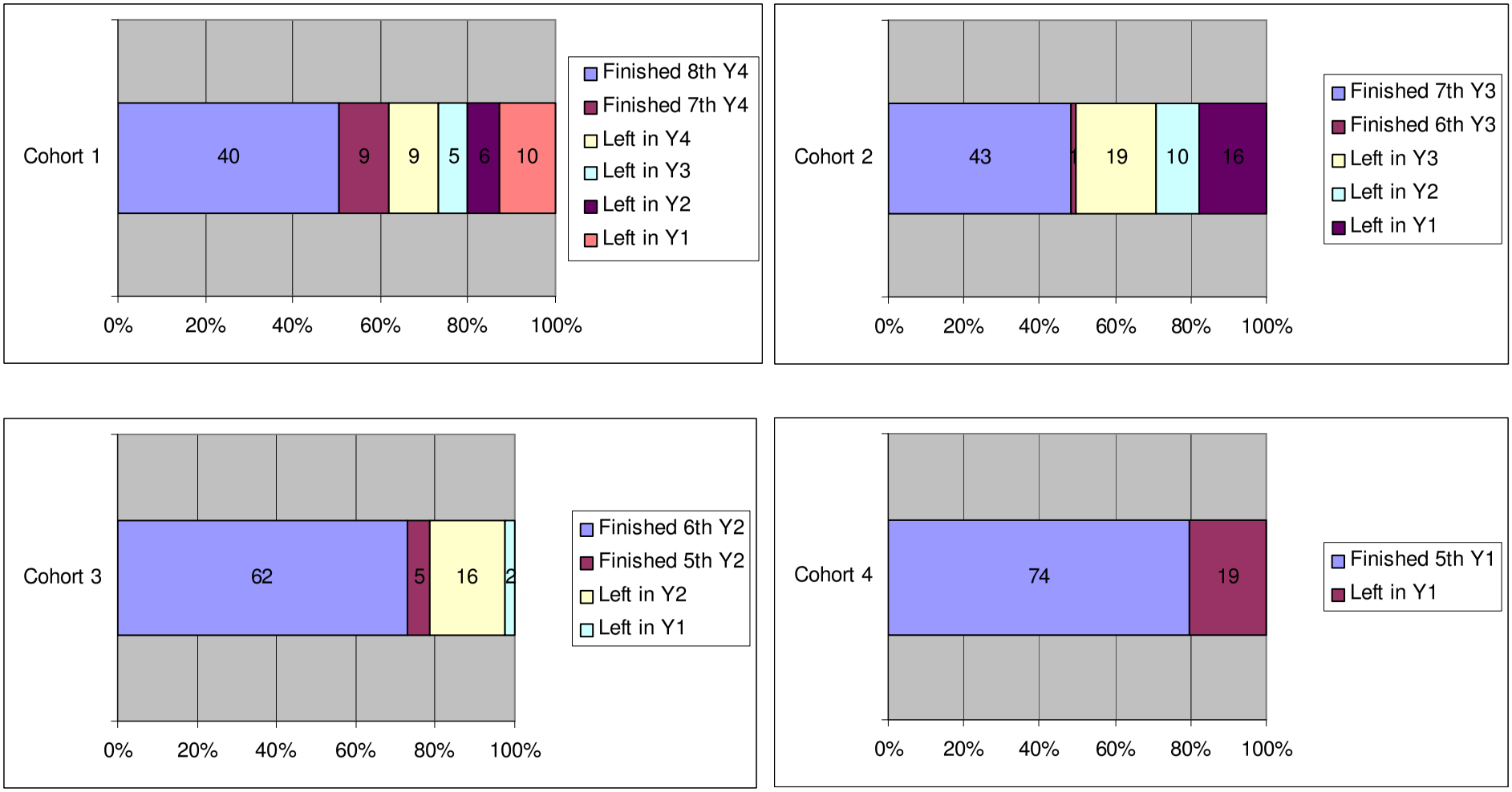
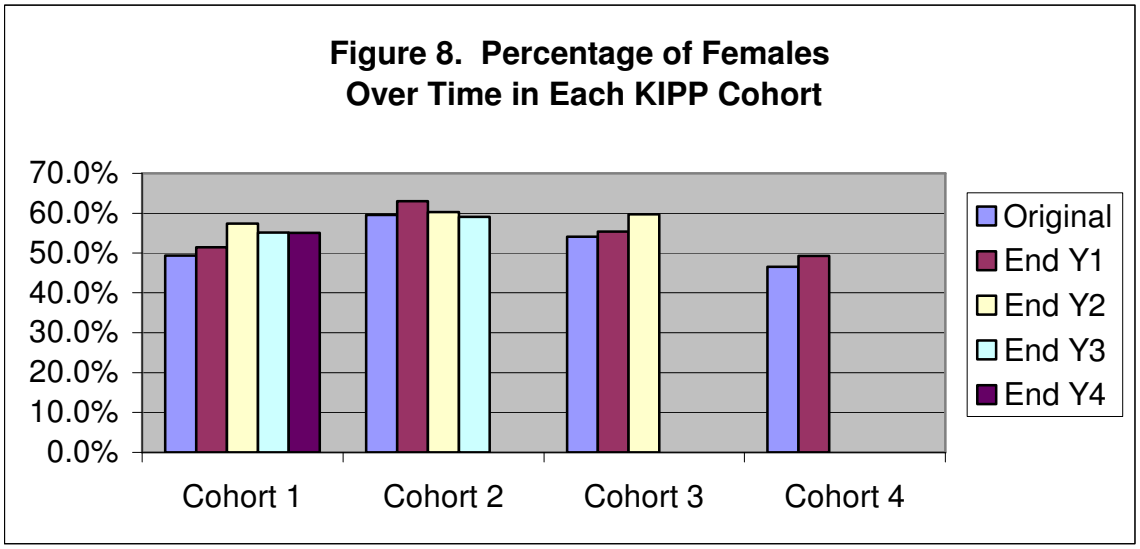


Figure 8. Percentage of Females Over Time in Each KIPP Cohort



Of the 79 fifth graders enrolled (as of September 30) in KIPP's first year (2002-03), just 49 students remained at KIPP four years later (Spring 2006). Of these, just 40 were 8th graders; the other 9 had been retained and were in 7th grade. A total of 7 students had transferred into this cohort (5 in Year 1, 2 in Year 2), with 2 leaving before the end of 2005-06.

In KIPP's second year (2003-04), a total of 89 new fifth graders were on roll as of September 30. By the end of their third year, just 44 of those students remained (all in 7th grade but one). A total of 28 students transferred into this cohort (3 in Year 1, 25 in Year 2), with 11 transfer students leaving before the end of 2005-06.

A total of 85 new 5th grade students enrolled in KIPP in 2004-05 (KIPP's third year). All but two of these came back the next year (with 7 repeating 5th grade and one skipping 6th grade to enroll in 7th), but 13 students left during that second year. At the end of 2005-06, just 67 students were still enrolled (mostly in 6th grade, with 5 fifth graders and one seventh grader). All six transfer students into this 5th grade cohort in 2004-05 left by the end of that year, but 14 of 17 students who transferred into the cohort in 2005-06 remained at the end of that year.

KIPP's fifth grade cohort in 2005-06 began with 93 students as of September 30, but 19 of these had transferred by the end of the year (with 74 students remaining). There was an additional transfer student (of 12 total transfer students during the year) who remained at the end of the year.

Students who left KIPP did not have significantly different prior achievement (4th grade) scores, but did have significantly lower 5th grade scores as a group. Since achievement of students who left during the 5th grade year could be due to instruction received in the post-KIPP school they attended, we excluded first-year leavers from analyses. The group of students who left KIPP after their first year (and had all of 5th grade at KIPP) still scored significantly lower on some 5th grade achievement measures than did students who stayed. Table 10 summarizes these differences for each cohort. In Cohort 1, leavers scored significantly lower than stayers on 5th

grade reading. In Cohort 2, leavers scored significantly lower than stayers on 5th grade math. In Cohort 3, leavers had significantly lower 5th grade attendance at KIPP than did stayers, and they also had significantly lower 5th grade reading scores.

Table 10. KIPP Cohort Achievement Summary for Stayers and Leavers (Excluding Those who Left During 5th Grade Year)

	Cohort 1 5th grade 2002-03		Cohort 2 5th grade 2003-04		Cohort 3 5th grade 2004-05	
	Stayers	Leavers	Stayers	Leavers	Stayers	Leavers
5th grade Math	405.1	397.8	**427.0**	**414.0**	435.4	424.4
5th Grade Reading	**414.4**	**397.3**	387.0	383.3	**402.5**	**379.2**
5th grade attendance	99.8%	99.4%	95.7%	93.3%	**97.7%**	**93.7%**

Note: Statistically significant differences ($p < .05$) indicated in bold font.

Those students who withdrew from KIPP left the school for a variety of destinations. Many of those who withdrew during their first year at KIPP returned to a feeder elementary school, as is evidenced in Table 11. The large majority of all students who left KIPP transferred to Baltimore public school. It is possible that some of these students subsequently opted to leave the district, but our analyses did not follow their trajectories over time. The majority of the remaining students withdrawing from KIPP left BCPSS for a Maryland public school or, to a lesser extent, a public school outside of Maryland. Few students opted for home schooling (only 1 student) or for private schools in Baltimore (2 students). Table 11 elaborates on students' destinations by cohort.

Since most comparison group students had a necessary change of school (into middle school) during the longitudinal study, it was not possible to calculate a directly comparable rate of attrition for this group.[10] We can compare withdrawal rates reported by the Maryland State Department of Education (MSDE) for middle grades (6-8) students at KIPP and BCPSS as a whole. The elementary withdrawal rate for KIPP reported by MSDE applies to grade 5 only, but there is no reported 5th grade withdrawal rate for BCPSS. We estimated a fifth grade withdrawal rate for BCPSS for each year by finding the percentage of 5th grade students in each cohort year who had multiple records in the BCPSS database (almost always a sign of change of school) or a withdrawal code (leaving district) for those with just one record. These figures are summarized in Table 12 below. While the MSDE reported middle grades withdrawal rate for KIPP is considerably lower than for BCPSS as a whole, the 5th grade withdrawal rate for KIPP is generally higher (particularly in 2005-06) than for BCPSS as a whole. The small size of KIPP and the fact that there are no entrants to KIPP at the 7th and 8th grade level make it somewhat problematic to compare it to (primarily) middle school withdrawal rates. KIPP's withdrawal rates for grades 6-8 are similar to those of Baltimore charter schools serving grades 6-8 (though as documented in Appendix D, KIPP's 2005-06 withdrawal rate tends to be higher than most other charter-type schools).

[10] There was no evidence that comparison group students leaving the district had higher prior achievement scores than those remaining in the district (a factor which could have contributed to the KIPP achievement effect, but apparently did not).

Table 11. Initial Withdrawal Destinations for Students Leaving KIPP

	Cohort 1		Cohort 2		Cohort 3		Cohort 4	
To a feeder school	33.33%	10	26.67%	12	16.67%	3	68.42%	13
To another BCPSS school	56.67%	17	48.89%	22	55.56%	10	21.05%	4
Elementary Schools								
Commodore John Rodgers Elementary (27)				2				
Walter P. Carter Elementary (134)								2
Lafayette Elementary (202)								1
Belmont Elementary (217)								1
Callaway Elementary (251)*		1		1				
Elementary/Middle Schools								
Cherry Hill Elementary/Middle (159)						1		
Dickey Hill Elementary Middle (201)						1		
Roland Park Elementary Middle (233)		1						
Glenmount Elementary Middle (235)				1				
Middle Schools								
Hamilton Middle (41)		2						
Garrison Middle (42)				2				
Highlandtown Middle (43)				1				
Robert Poole Middle (54)		1						
William H. Lemmel Middle (79)						3		
Dr. Roland Patterson Sr. Academy (82)		11		8		3		
Paul Laurence Dunbar Middle (133)				1				
Winston Middle (209)				1				
Pimlico Middle (222)		1		4		2		
To Baltimore private school	3.33%	1	0.00%	0	5.56%	1	0.00%	0
To Maryland public school	6.67%	2	13.33%	6	16.67%	3	5.26%	1
To US public school	0.00%	0	6.67%	3	5.56%	1	5.26%	1
To home schooling	0.00%	0	2.22%	1	0.00%	0	0.00%	0
Unknown	0.00%	0	2.22%	1	0.00%	0	0.00%	0
Total	***100.0%***	***30***	***100.0%***	***45***	***100.0%***	***18***	***100.0%***	***19***

*This school later became a feeder school but was not for the first two cohorts

Table 12. Yearly Withdrawal (Including Within District Transfer) Rates for KIPP and BCPSS Students[11]

	2002-03		2003-04		2004-05		2005-06	
	5th	6-8th	5th	6-8th	5th	6-8th	5th	6-8th
KIPP	18.0%	NR	17.8%	NR	14.2%	9.4%	33.1%	12.6%
BCPSS	15.7%	24.5%	16.2%	27.5%	17.4%	23.0%	16.7%	20.8%

On-Time Promotion

Table 13 summarizes the on-time promotion rates for KIPP and comparison group students for each grade in each cohort. In Cohort 1, on-time promotion rates to 6th and 7th grades were somewhat (but not significantly) higher for KIPP. KIPP had a slightly (but not significantly) lower on-time promotion rate to 8th grade in Cohort 1. In Cohorts 2 and 3, KIPP students had a significantly lower on-time promotion rate to 6th grade than did comparison group students. KIPP's lower on-time promotion rate to 7th grade in Cohort 2 approached statistical significance (p=.066). KIPP's standards for promotion were higher than those in comparison students' schools (with 70% rather than 60% as the lowest passing grade).

Table 13. Summary of On-Time Promotion Rates

	Cohort 1 5th grade 2002-03		Cohort 2 5th grade 2003-04		Cohort 3 5th grade 2004-05	
	Original Cohort	Comparison Group	Original Cohort	Comparison Group	Original Cohort	Comparison Group
On-time promotion to 6th	97.4	93.6	**93.1**	**98.6**	**91.7**	**98.6**
On-time promotion to 7th	89.5	87.2	**83.5**	**90.4**		
On-time promotion to 8th	79.0	84.0				

Note: Statistically significant differences (p<.1) indicated in bold font.

[11] The figures in Table 12 for KIPP 5th, KIPP 6-8, and BCPSS 6-8 are from the MSDE website. Withdrawals are defined there as "the number and percentage of students withdrawing (transfers and terminations) for any reason during the September to June school year after the first day of school. The percentage of withdrawals is calculated by dividing the number of withdrawals by the average daily membership." The BCPSS 5th grade withdrawal figure in the table is estimated from individual level BCPSS student data (% of 5th grade students with multiple records or a record of transfer out of the district that year).

Conclusion

Longitudinal analyses of four cohorts of students in Baltimore indicate significantly better achievement outcomes for KIPP students, particularly in mathematics, than for comparison group students from the same feeder elementary schools. Even when students who left KIPP are included as KIPP students in analyses, achievement results are significantly better for the KIPP group. For those students who remained at KIPP during the middle grades (6th through 8th), outcomes were dramatically better than for those who attended other district middle grades schools.

Though KIPP and comparison students were similar in 4th grade achievement and attendance, as well as on demographic variables, it is important to note that it was not possible to measure other important differences between KIPP and comparison students. In particular, differences in family support variables (parental education, amount of parental interaction with students on academic and other activities, etc.) could not be measured, and could contribute significantly to the later achievement differences between the groups.

It is likely that several components of the KIPP program contributed to higher student achievement: the longer school day and other additional hours of instruction, high quality curriculum and instruction (especially in mathematics), and positive school climate (facilitated by smaller numbers of students than in comparison students' schools, fewer behavioral problems, etc.). Scaling up these components throughout the district is an attractive proposal, but would likely be very costly. It is also important not to ignore the attrition from the KIPP program, as well as the relatively higher retention in grade rates for KIPP students. Assuring that a KIPP model could succeed on a large scale and sustain such high rates of achievement would be an extremely challenging task. Qualitative studies that probe into reasons for the attrition among KIPP students would be a useful research contribution as district policymakers make decisions on expanding the number of KIPP schools.

It is possible that keeping middle grades students in smaller learning environments (newly converted K-8 schools rather than middle schools) will address the school climate issue, but the primary challenge is to find ways to ensure high quality instruction in every classroom, every day. In addition, more ways of providing extra help for struggling students need to be incorporated into district- and school-level planning of instructional delivery. The KIPP Ujima Village Academy in Baltimore has shown that high quality instruction and extra learning time in a positive school environment does make a difference in student achievement. The challenge is to find ways to make this a reality for most urban students, rather than for just a few.

References

Abell Foundation (2006, September). *Baltimore's "new" middle schools: Do KIPP and Crossroads Schools offer solutions to the city's poorly-performing middle schools?* Baltimore, MD: Author.

Anderson, A.B., & DeCesare, D. (2006). *Opening closed doors: Lessons from Colorado's first independent charter school*. Denver, CO: Augenblick, Palaich & Associates.

Choi, W.C. (2003). KIPP: Researching underserved middle schoolers. *Kappa Delta Pi Record* 39(2), 66-69.

CTB/McGraw-Hill. (2006). *Technical Report 2006 for Maryland School Assessment*. Baltimore, MD: Maryland State Department of Education.

David, J., Woodworth, K., Grant, E., Guha, R., Lopez-Torkos, A., & Young, V. (2006). *Bay Area KIPP schools: A study of early implementation. First year report 2004-05.* Menlo Park, CA: SRI International.

Doran, H.C. & Drury, D.W. (2002). *Evaluating success: KIPP educational program evaluation*. Technical Report, New American Schools Education Performance Network.

Educational Policy Institute. (2005). *Focus on results: An academic impact analysis of the Knowledge Is Power Program (KIPP).* Virginia Beach, VA: Author. Retrieved May 8, 2007 from http://www.educationalpolicy.org/publications.html.

Gallegher, B.M., & Ross, S.M. (2005). *Analysis of year 2 (2003-04) student achievement outcomes for the Memphis KIPP Diamond Academy*. Memphis, TN: Center for Research in Education Policy.

Izumi, L. (2004). *A charter school on the right track*. San Francisco, CA: Pacific Research Institute. Retrieved May 8, 2007 from http://72.14.209.104/search?q=cache:yX_Ea6LSI7UJ:www.pacificresearch.org/pub/sab/educat/2004/KIPP.pdf+Izumi+Charter+School&hl=en&ct=clnk&cd=3&gl=us

KIPP. (2007). About KIPP. Retrieved May 8, 2007 from http://www.kipp.org

San Francisco Schools Blog. (2007). Where have all the KIPPSTER's gone? Retrieved May 8, 2007 from http://www.sfschools.org/2007/02/where-have-all-kippsters-gone.html.

Appendix A

The following chart summarizes elementary schools in the designated geographic zone for KIPP Ujima Academy that were the sending 4th grade schools for KIPP students in each 5th grade cohort.

KIPP Feeder School Cohort Summary

School	School Number	% FRL 04-05	Cohort 1 5th grade 2002-03	Cohort 2 5th grade 2003-04	Cohort 3 5th grade 2004-05	Cohort 4 5th grade 2005-06
Brehms Lane	231	81.1%	X			
Eutaw-Marshburn	11	91.5%	X			
Edgecombe Circle	62	87.7%	X	X	X	X
Langston Hughes	5	96.7%	X	X	X	X
MLK Jr.	254	88.5%	X	X	X	X
Pimlico	223	91.0%	X	X	X	X
Arlington	234	83.1%			X	X
Callaway	251	81.4%			X	X
Cross Country	247	68.4%			X	X

The comparison group for each cohort (except Cohort 2) included promoted 4th graders from the marked schools. For cohort 2, we included students from schools #231 and #11 to maintain n size. Prior achievement scores from those schools did not differ significantly from those from the others. In cohorts 3 and 4 excluded #231 and #11 from comparison group, and included students from the new feeder elementaries.

Appendix B
Comparison Students' 6th Grade School of Attendance, By Cohort

		Cohort 1	Cohort 2	Cohort 3
	Elementary & Elementary/Middle			
4	Steuart Hill Elementary		1	2
8	City Springs Elementary			1
31	Coldstream Park Elementary			1
51	Waverly Elementary	1	2	2
81	North Bend Elementary	1	1	
89	Rognel Heights Elementary		1	3
97	Collington Square Elementary	1		
105	Moravia Park Primary	1	1	2
157	George G. Kelson Elementary	1		4
247	Cross Country Elementary			47
12	Lakeland Elementary/Middle	1	2	2
54	Barclay Elementary/Middle		5	
58	Dr. Nathan A. Pitts Asburton Elementary/Middle	2		4
66	Mount Royal Elementary/Middle	5	6	6
76	Francis Scott Key Elementary/Middle	2		1
163	Patapsco Elementary/Middle		1	
164	Arundel Elementary/Middle	1		
205	Dickey Hill Elementary/Middle	1	1	
210	Hazelwood Elementary/Middle	1	6	2
214	Guilford Elementary/Middle	4		2
233	Roland Park Elementary/Middle	6	7	20
235	Glenmount Elementary/Middle	3	4	1
236	Hamilton Elementary/Middle	3		1
	Middle			
41	Hamilton Middle	13	19	2
42	Garrison Middle	9	17	40
43	Highlandtown Middle	12	4	3
46	Chinquapin Middle	5	8	6
49	Northeast Middle	6	10	2
56	Robert Poole Middle	3	4	4
57	Lombard Middle	2	5	5
75	Calverton Middle	4	7	6
78	Harlem Park Middle	4	3	6
79	William H. Lemmel Middle	7	6	11
80	West Baltimore Middle	4	3	11
82	Dr. Roland N. Patterson Sr. Academy	130	143	119
130	Booker T. Washington Middle	24	32	31
133	Paul Laurence Dunbar Middle	9		
162	Diggs-Johnson Middle	2	5	2
170	Thurgood Marshall Middle	77	65	2
209	Winston Middle	1		4
222	Pimlico Middle	42	29	82
230	Canton Middle		4	1
239	Benjamin Franklin Jr. Middle	2		1
255	Southeast Middle			2
	Other/Unknown			
201	Francis M. Wood Alternative High	2	2	6
303	Upton School	1		
321	Midtown Academy	1		
325	ConneXions Community Leadership	1	1	
488	Alternative Learning Center	1		1

Appendix C-1

Summary of Ordinary Least Squares Regression Results for Reading and Mathematics Achievement Scores for Cohort 1

	5th Grade Math 2003			5th Grade Reading 2003			6th Grade Math 2004			6th Grade Reading 2004		
	Coeff	(se)	Sig.	Coeff	(se)	Sig.	Coeff	(se)	Sig.	Coeff	(se)	Sig.
Constant	20.95	1.87	.000	16.58	1.92	.000	307.31	7.00	.000	325.85	6.08	.000
4th grade score	0.57	.03	.000	0.65	0.04	.000	1.10	.13	.000	1.14	.12	.000
Ever Special Education	-7.25	1.89	.000	-3.91	1.68	.020	-35.70	6.99	.000	-19.94	5.26	.000
Male	-0.12	1.17	.921	1.64	1.01	.106	-5.30	4.36	.225	-2.70	3.21	.400
Ever KIPP	**24.04**	**1.60**	**.000**	**-1.77**	**1.43**	**.217**	**36.71**	**5.86**	**.000**	**3.42**	**4.38**	**.435**
Separating KIPP leavers												
(reported if EVERKIPP does not yield significant positive effect)												
Constant				16.68	1.93	.000				326.40	6.01	.000
4th grade score				0.64	.04	.000				1.11	.12	.000
Ever Special Education				-3.98	1.68	.018				-20.40	5.20	.000
Male				1.66	1.01	.102				-1.42	3.19	.656
KIPP stayer				**-1.34**	**1.52**	**.379**				**10.88**	**4.85**	**.026**
KIPP leaver				**-4.72**	**3.72**	**.205**				**-21.21**	**8.45**	**.012**

	7th Grade Math 2005			7th Grade Reading 2005			8th Grade Math 2006			8th Grade Reading 2006		
	Coeff	(se)	Sig.	Coeff	(se)	Sig.	Coeff	(se)	Sig.	Coeff	(se)	Sig.
Constant	291.64	7.44	.000	309.90	7.40	.000	336.99	6.73	.000	332.65	5.08	.000
4th grade score	1.26	0.14	.000	1.33	.14	.000	0.89	0.12	.000	1.11	.10	.000
Ever Special Education	-23.46	7.19	.001	-10.58	6.35	.097	-38.71	6.44	.000	-13.53	4.20	.001
Male	-10.59	4.36	.016	-3.85	3.84	.316	-7.67	3.91	.051	-5.42	2.58	.036
Ever KIPP	**42.13**	**5.69**	**.000**	**23.34**	**5.05**	**.000**	**53.72**	**5.03**	**.000**	**17.21**	**3.35**	**.000**

Note: 5th grade results are based on NCE scores on Terra Nova tests; 6th-8th grade results based on scale scores on MSA tests.

Appendix C-2

Summary of Ordinary Least Squares Regression Results for Reading and Mathematics Achievement Scores for Cohort 2

	5th Grade Math 2004			5th Grade Reading 2004			6th Grade Math 2005			6th Grade Reading 2005		
	Coeff	(se)	Sig.	Coeff	(se)	Sig.	Coeff	(se)	Sig.	Coeff	(se)	Sig.
Constant	320.69	4.99	.000	350.25	3.08	.000	297.08	6.86	.000	317.90	5.46	.000
4th grade score	1.19	0.09	.000	0.86	.06	.000	1.34	.13	.000	1.31	.11	.000
Ever Special Education	-6.45	4.84	.183	-4.74	3.24	.145	-16.61	6.60	.012	-13.58	4.79	.005
Male	0.04	3.12	.991	-5.09	2.16	.019	-6.74	4.26	.114	-7.57	3.10	.015
Ever KIPP	**40.44**	**4.14**	**.000**	**0.18**	**2.91**	**.950**	**35.08**	**5.61**	**.000**	**15.33**	**4.11**	**.000**
Separating KIPP leavers												
(reported if EVERKIPP does not yield significant positive effect)												
Constant				350.58	3.06	.000						
4th grade score				0.85	.06	.000						
Ever Special Education				-4.54	3.22	.160						
Male				-4.96	2.15	.021						
KIPP stayer				**3.39**	**3.15**	**.282**						
KIPP leaver				**-13.79**	**6.18**	**.026**						

	7th Grade Math 2006			7th Grade Reading 2006		
	Coeff	(se)	Sig.	Coeff	(se)	Sig.
Constant	282.31	7.20	.000	328.26	5.14	.000
4th grade score	1.53	0.13	.000	1.10	.10	.000
Ever Special Education	-30.85	7.01	.000	-20.55	4.67	.000
Male	-5.61	4.44	.208	-7.56	2.93	.010
Ever KIPP	**67.49**	**5.94**	**.000**	**23.88**	**3.94**	**.000**

Appendix C-3

Summary of Ordinary Least Squares Regression Results for Reading and Mathematics Achievement Scores for Cohort 3

	5th Grade Math 2005			5th Grade Reading 2005			6th Grade Math 2006			6th Grade Reading 2006		
	Coeff	(se)	Sig.	Coeff	(se)	Sig.	Coeff	(se)	Sig.	Coeff	(se)	Sig.
Constant	190.70	15.33	.000	203.85	15.81	.000	124.65	19.42	.000	180.30	17.37	.000
4th grade score	0.55	0.04	.000	0.51	.04	.000	0.67	.05	.000	0.53	.05	.000
Ever Special Education	-9.99	4.49	.026	-4.19	3.77	.267	-27.78	6.02	.000	-14.27	4.53	.002
Male	-2.69	2.98	.368	-6.33	2.52	.012	-6.97	3.78	.066	-5.20	2.84	.068
Ever KIPP	**29.40**	**4.17**	**.000**	**1.84**	**3.51**	**.601**	**38.72**	**5.31**	**.000**	**24.16**	**3.98**	**.000**
Separating KIPP leavers (reported if EVERKIPP does not yield significant positive effect)												
Constant				203.36	15.77	.000						
4th grade score				0.51	.04	.000						
Ever Special Education				-4.16	3.76	.269						
Male				-6.10	2.52	.016						
KIPP stayer				**3.93**	**3.67**	**.284**						
KIPP leaver				**-16.86**	**10.30**	**.102**						

Appendix C-4

Summary of Ordinary Least Squares Regression Results for Reading and Mathematics Achievement Scores for Cohort 4

	5th Grade Math 2006			5th Grade Reading 2006		
	Coeff	(se)	Sig.	Coeff	(se)	Sig.
Constant	185.63	14.19	.000	204.55	13.33	.000
4th grade score	0.57	0.04	.000	0.51	.03	.000
Ever Special Education	-13.17	4.13	.002	-6.22	3.10	.046
Male	-4.95	3.14	.116	-3.31	2.40	.169
Ever KIPP	**8.30**	**3.95**	**.036**	**-7.33**	**3.01**	**.015**
Separating KIPP leavers (reported if EVERKIPP does not yield significant positive effect)						
Constant				204.84	13.32	.000
4th grade score				0.51	.03	.000
Ever Special Education				-5.96	3.10	.056
Male				-3.16	2.40	.188
KIPP stayer				**-5.80**	**3.20**	**.071**
KIPP leaver				**-16.58**	**7.31**	**.024**

Appendix D

MSDE-Reported Middle Grades (6th to 8th) Withdrawal Rates for KIPP Ujima Village Academy and Other Charter and Charter-Type Schools

	2004-05	2005-06
KIPP Ujima Village	**9.4%**	**12.6%**
Midtown Academy	12.3%	6.6%
ConneXions	4.9%	2.6%
City Springs	14.5%	9.2%
Collington Square	12.8%	17.2%
Hampstead Hill	NA	9.5%
Crossroads	10.2%	6.3%
New Song Academy	4.9%	0.0%
Stadium School	8.0%	9.7%