

ALBUQUERQUE PUBLIC SCHOOLS

The Impact of Kindergarten Plus

Summative and Formative Evaluation
2003-2006

January 2007
Nancy Carrillo



ALBUQUERQUE PUBLIC SCHOOLS

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Board of Education Executive Summary January 2007

TOPIC	<ul style="list-style-type: none"> Kindergarten Plus, 2003-06 School Years
APS STRATEGIC DIRECTION	<ul style="list-style-type: none"> Academic Excellence
BACKGROUND	<ul style="list-style-type: none"> New Mexico was the first state to implement Kindergarten Plus in 2003 when HB 61 created a three-year pilot project. The NM State Legislature extended Kindergarten Plus for another three years in 2006. Currently, eight APS classrooms in five schools participate. Kindergarten Plus has recently been initiated in at least two other states. A bill was introduced in the U.S. Senate to fund the program nationally in 2006.
HOW ARE WE DOING?	<ul style="list-style-type: none"> The cost of Kindergarten Plus for the first three years averages to about \$1,675 per student. KPlus students compared to non-KPlus students in the same schools score statistically significantly and substantially higher in reading, math and social skills when the normal school year begins. Differences between the groups generally remain statistically significant throughout the school year. The impact wanes to a weak effect during the normal school year; then rises again with the extra instructional days at the end of the Kindergarten Plus program. Differences between KPlus and non-KPlus students are more evident with KDPR measures compared to DIBELS measures. No statistically significant differences between KPlus and non-KPlus students appear for students assessed using Spanish DIBELS measures. Results related to the impact of Kindergarten Plus on reading at the end of first grade are mixed. If true, the impact appears to be weak. Teachers feel the program is successful and report good parental and district support. They face challenges with young students and incorporating new students when the normal school year begins. Recruitment is time-consuming.
HOW DO WE COMPARE?	<ul style="list-style-type: none"> The cost of the initiative is similar to the AFT estimated cost of \$1,974/student. All students in Gallup made more progress over time on DIBELS subtests; and differences between K-Plus and non K-Plus students were more dramatic. The 2002 Office of Education Accountability reported statewide Kindergarten Plus issues that remain true in APS – difficulty in recruitment and attrition at the end of the program.
DOES THIS HAVE A COMPANION OUTCOME?	<ul style="list-style-type: none"> “The Impact of Kindergarten Plus,” a technical report, was released by Research, Development and Accountability in January 2007.
HOW DO WE USE THIS INFORMATION?	<ul style="list-style-type: none"> This information in the technical report can be used to make project improvements to Kindergarten Plus, as well as compare outcomes with similar initiatives.

THE IMPACT OF KINDERGARTEN PLUS SUMMATIVE AND FORMATIVE EVALUATION 2003-2006

BACKGROUND

In 2002, president of the American Federation of Teachers, Sandra Feldman, proposed Kindergarten Plus as a method of decreasing the achievement gap between low and high SES beginning kindergartners.¹ New Mexico became the first state to adopt the program when the New Mexico Legislature passed House Bill 61 (sponsored by Mimi Stewart – D Albuquerque) in 2003. The bill created a three-year “Kindergarten Plus” pilot project fund for which high-poverty schools in the Albuquerque, Gallup-McKinley, Gadsden and Las Cruces school districts were eligible. These funds covered teacher salaries for an additional forty days of instruction.² Section 1A of the legislation details the purpose of the program:

The ‘kindergarten plus’ pilot project is created as a three-year study that extends the kindergarten year by four months for participating students and measures the effect of additional time on literacy, numeracy and social skills development. The purpose of kindergarten plus is to demonstrate that increased time in kindergarten narrows the achievement gap between disadvantaged students and other students and increases cognitive skills and leads to higher test scores for all participants.

For each year of the pilot project, the state appropriated \$100,000 to APS for Kindergarten Plus. One classroom in each of five elementary schools participated. Mountain View participated the first year (03-04—hereafter referred to as “Cohort I”); Valle Vista participated the second and third years (04-05 and 05-06—“Cohort II” and “Cohort III,” respectively); and Hawthorne, Dolores Gonzales, and Los Padillas participated all three years.

The Kindergarten Plus pilot project was extended three more years through New Mexico HB 43 (2006 Regular Session). During the current 06-07 school year, the Legislature appropriated \$200,000 to APS to continue Kindergarten Plus in eight classrooms in five schools—Dolores Gonzales, Hawthorne, Lavaland, Los Padillas, and Valle Vista.

Kindergarten Plus initiatives have begun in at least two other states (Indiana and Minnesota). In addition, a bill to fund Kindergarten Plus nationally was introduced by U.S. Senator Dodd (D-Connecticut) in September, 2006 (S. 4033).

¹ Feldman, Sandra. 2002. Convention Keynote Speech, American Federation of Teachers: Las Vegas. http://www.aft.org/presscenter/speeches-columns/speeches/downloads/Feldman_071502.pdf.

² In Gadsden, the funds were used to initiate a pre-Kindergarten program for 4-year-olds during the normal school year.

THE INTERVENTION

Kindergarten Plus provides an extra 40 days of instruction. These days are divided between July and August before school starts (20-26 days) and May and June after school concludes (14-20 days). Teachers report that while they conduct the extra school days similarly to their regular school year day, there are a few differences. There are few interruptions and no pull-out or extra classes, so work can be done in a more flexible and relaxed manner. Teachers can incorporate experiential learning opportunities and go into more depth with the extra time.

PREVIOUS RESEARCH

Two evaluations of the Kindergarten Plus initiative have been published. In January, 2005, the NM Office of Education Accountability released its findings and recommendations based on their quantitative and qualitative evaluation of the first year of the initiative.³ This research included an analysis of Kindergarten Plus students' DIBELS benchmark levels over time as well as visits to Kindergarten Plus sites in Albuquerque, Gallup and Las Cruces, representing a total of about 200 students. The researchers found that the percentage of students in high risk categories on all DIBELS subtests decreased over time among Kindergarten Plus students. In the analysis of their site visits, they report that Kindergarten Plus appears to improve students' social skills and parent involvement. They also determined that the time spent in the program before the beginning of the normal school year was more valuable than the time spent after the end of the normal school year because attendance tends to wane after the normal school year ends.

A year later, Gallup-McKinley County Schools published quantitative results, again drawing upon DIBELS subtest scores.⁴ This research compares 39 KPlus students to 25 non-KPlus students in the same schools. They find strong evidence that KPlus students score statistically significantly higher and usually substantially higher on DIBELS subtests throughout the kindergarten school year and the beginning of first grade.

This report is a summative and formative evaluation covering the first three years of the Kindergarten Plus pilot project in Albuquerque. We utilize a quasi-experimental design by including a comparison group, and include qualitative information in the form of teachers' perceptions. The research examines three years of data and analyzes two assessments.

³ Thorstensen, B.I and P. Winograd. 2005. *The New Mexico Kindergarten Plus Pilot Program: Initial Findings and Recommendations*. The New Mexico Department of Finance and Administration, Office of Education Accountability: Santa Fe. <http://education.nmdfa.state.nm.us/cms/kunde/rts/educationnmdfastatenmus/docs/202709652-06-26-2006-16-43-10.pdf>.

⁴ Monaghan, E.L. 2006. *Analysis of Effectiveness GMCS Kindergarten Plus Program (2004-2005, 2005-2006)*. Learning Analysis and Support, Gallup-McKinley County Schools. http://www.gmcs.k12.nm.us/Research_Eval_Assess_Accountability/KindergartenPlusAnalysis2.htm.

RESEARCH QUESTIONS

Summative Evaluation:

How well did Kindergarten Plus meet its goals of narrowing the achievement gap between disadvantaged students and other students?

Formative Evaluation:

What factors are important in implementing Kindergarten Plus well?

METHODS

Sample

The sample consists of the 223 students participating in Albuquerque Kindergarten Plus in the 03-04, 04-05, and 05-06 school years and a comparison group of 782 peers in the same schools that did not participate in Kindergarten Plus. Of the 223 “KPlus” students, 179 (80%) completed the entire program. Twenty-eight students participated in the first part of Kindergarten Plus (July and August before the regular Kindergarten year)⁵, but not the second part (May and June after the regular Kindergarten year); sixteen students participated in the second but not the first part. Most analyses compare the 179 students that completed Kindergarten Plus in its entirety to the 782 peers that did not participate in any part of the program.

Procedure

Over the course of the program, RDA collected both quantitative and qualitative information about Kindergarten Plus.

Quantitative information consists of cost, enrollment and assessment data. Assessment information includes DIBELS and KDPR assessments. DIBELS includes several sub-tests related to early reading skills and is collected for all students at the beginning, middle, and end of the year. DIBELS is also administered to Kindergarten Plus students at the beginning (July) and end (June) of their extended school year (available for Cohort III only). DIBELS is designed for screening purposes and does not relate directly to New Mexico educational standards. KDPR is administered at the beginning and end of the school year for all students and assesses literacy, math, and social skills. This comprehensive assessment is designed by Albuquerque Public Schools for the purpose of directly measuring New Mexico educational standards.

The quantitative analyses used in this research are Student’s independent t-tests. Essentially, t-tests determine whether the difference between two groups is more than just by chance. Cohen’s d, used throughout this study, shows how strong the difference is. Cohen’s d ranges from 0 to 1; .2 is considered a weak difference while .8 is considered a strong difference.⁶ Considering the many influences on assessment scores, we would probably not expect any short-term intervention to create a strong difference between groups.

⁵ This represents a 14% attrition rate.

⁶ Kotrlik, J.W. and H.A. Williams. 2003. The Incorporation of Effect Size in Information Technology, Learning, and Performance Research. *Information Technology, Learning and Performance Journal* 21, 1-7.

Qualitative data consists of teacher telephone interviews, collected in the middle of the Cohort I year and after the Cohort II year.⁷ Questions focused on how students were selected, what activities took place during the extended time, parent involvement, normal school year curriculum, behavior/social issues, administrative support, teacher characteristics, professional development, parental perceptions, successes in the program, and possible negative consequences.

RESULTS

Summative Evaluation

Cost per student. The \$100,000 received each year from the State of New Mexico were used to pay teacher, EA, and nurse salaries and benefits; principal stipends; supplies; equipment; and administrative costs. The funds did not include breakfasts, lunches, and transportation costs, which were provided by different entities depending on the school.

The cost per student estimated by the American Federation of Teachers is \$1,974, including meals and transportation.⁸ The cost per student in Albuquerque is very comparable. Over the three years of the pilot program, 179 students completed the entire program. Considering only the PED funds, the cost per student completing the entire Kindergarten Plus program is about \$1,675 on average. However, an additional 44 students participated in Kindergarten Plus either before the school year began or after it ended; in total, 223 students received extra instruction. When all participating students are considered, the cost per student is about \$1,345.

Achievement. Assessment data was collected several times over the course of the year. KPlus students were assessed five times – at the start of Kindergarten Plus (July); the beginning, middle, and end of the normal school year (September, January, and April); and at the end of Kindergarten Plus (June). The comparison group of non-participating students was assessed the three times during the school year.

Since parents place their children in Kindergarten Plus voluntarily (rather than through random assignment), it is important to examine what differences, if any, exist between KPlus students and the comparison group of non-KPlus students. Each of the four demographic variables examined – ethnicity, gender, special education and ELL –are very similar with no statistically significant difference among them. Notably, both groups are high in their percentage of underperforming minority students (92%, usually Hispanic) and ELL students (50%). Never-the-less, the two groups could be similar demographically yet dissimilar academically. If students attending Kindergarten Plus happen to be better prepared for school *a priori*, then any differences between the groups in later assessments may not be due to the program. However, the opposite seems to be true. At least in terms of literacy, students attending KPlus seem to start school behind their peers, rather than ahead of them. Table 1 shows a comparison of starting

⁷ Cohort I interviews were designed and conducted by Debra O. Heath, Robert Behrendt and Ellen Cromer. Cohort II interviews were designed and conducted by Nancy Carrillo and Debra O. Heath.

⁸ No author cited. 2002. *Kindergarten Plus Question and Answers*. American Federation of Teachers. <http://www.aft.org/topics/ece/downloads/KPlusQ&A.pdf>

scores of KPlus and comparison group students on their first assessment of the year, DIBELS Initial Sound Fluency (ISF), when little or no instruction had taken place. The results indicate that Non-KPlus students testing in English scored statistically significantly and substantially higher than KPlus students. This trend is evident, though weaker, for students testing in Spanish as well, and the difference fails to reach statistical significance. However, the effect sizes are quite similar for both groups and indicate that non-KPlus students start school moderately ahead of KPlus.

**Table 1: Differences between KPlus and Non-KPlus Students, Cohort III
Start of Kindergarten Year: Reading**

	<u>KPlus students</u>	<u>Non-KPlus students</u>	<u>Difference</u>	<u>t-value</u>	<u>Cohen's d</u>
<i>Assessment</i>	Avg. score (n)	Avg. Score (n)			
English DIBELS ISF – Starting	2.43 (49)	6.93 (469)	4.47	6.70***	.34
Spanish DIBELS ISF – Starting	2.00 (9)	3.56 (29)	1.76	1.46	.36

*p<.1, **p<.05, ***p<.01

Unfortunately, there is a gap in time between this “starting assessment” for KPlus students and the comparison group. KPlus students were administered the DIBELS ISF subtest during the first part of July, while non-KPlus students were administered the subtest in late August or early September. Maturation and instruction at home or elsewhere in the two-month interim could explain some of the difference between the two groups; but it is doubtful that KPlus students begin school academically *ahead* of their peers. Thus, we can be reasonably sure that any differences in favor of the KPlus program are due to the KPlus program and not a pre-existing advantage among the KPlus students.

By the time Fall assessment data is collected, KPlus students have had approximately 3 months of instruction at school while non-KPlus students have had about 1 month of instruction. As seen in Table 2, most of the evidence suggests that these extra months are important for all three areas mentioned in the Kindergarten Plus legislation: reading, math, and social skills. Analyzing all three cohorts, we find KPlus students scored statistically significantly higher on all 3 portions of the KDPR.⁹ While the effect sizes for Kindergarten Plus appear weak or at best moderate, considering that KPlus students may in fact start school behind their peers, these differences provide respectable evidence for the early benefits of Kindergarten Plus.

The DIBELS information presented in Table 2 is less clear. Considering first Initial Sound Fluency (ISF), no difference exists between KPlus and non-KPlus students for either those assessed in Spanish or English. But, as seen in Table 2, non-KPlus students began school with higher scores on ISF than KPlus students. And, a paired t-test indicates that KPlus students assessed in English improved their scores substantially on ISF from an average of 2.50 to 5.93

⁹ The KDPR was revised for the 05-06 school year. Consequently, Cohort III is analyzed separately.

from July to early September (n=42, t=4.14, p<.01).¹⁰ With Letter Naming Fluency (LNF), KPlus students assessed in English scored a statistically significant 4.67 points higher than non-KPlus students. Again, those assessed in Spanish show the same trend though the difference is not statistically significant. In both cases, the effect sizes are considered weak.

**Table 2: Differences between KPlus students and Non-KPlus Students
Fall of Kindergarten: Reading, Math and Social Skills**

	<u>KPlus students</u>	<u>Non-KPlus students</u>	<u>Difference</u>	<u>t-value</u>	<u>Cohen's d</u>
<i>Assessment</i>	Avg. score (n)	Avg. score (n)			
KDPR Reading (Cohorts I & II)	38.94 (115)	31.35 (440)	7.59	6.71***	.21
KDPR Reading (Cohort III)	21.20 (50)	16.97 (235)	4.23	5.70***	.30
KDPR Math (Cohorts I & II)	13.50 (115)	10.88 (440)	2.62	8.28***	.14
KDPR Math (Cohort III)	22.22 (50)	16.95 (235)	5.27	6.68***	.35
KDPR Social (Cohorts I & II)	19.75 (115)	16.78 (440)	2.97	6.59***	.14
KDPR Social (Cohort III)	13.80 (49)	12.33 (223)	1.47	2.97***	.14
English DIBELS ISF	6.76 (113)	7.18 (382)	-.41	.54	.01
English DIBELS LNF	12.34 (113)	7.57 (382)	4.76	2.98***	.11
Spanish DIBELS ISF	6.44 (25)	6.57 (150)	-.13	.10	.01
Spanish DIBELS LNF	4.92 (25)	2.72 (150)	2.20	1.21	.15

*p<.1, **p<.05, ***p<.01

Table 3 shows assessment information for the middle of the school year. Four DIBELS subtests are available for comparing KPlus and non-KPlus student achievement in reading: Initial Sound Fluency (ISF), Letter Naming Fluency (LNF), Phoneme Segmentation Fluency (PSF) and Nonsense Word Fluency (NWF). When these assessments take place, KPlus students have received about 6½ months of instruction, compared to about 5 months of instruction for non-KPlus students. Considering those assessed in English first, KPlus students score higher for all four subtests, but the differences are only statistically significant for LNF and NWF and effect sizes are quite small for all subtests. For students assessed in Spanish, no statistically significant differences are found.

¹⁰ Cohort III and English only. No KPlus students were assessed in Spanish for both the July and September administrations of ISF.

**Table 3: Differences between KPlus students and Non-KPlus students
Winter of Kindergarten: Reading**

<i>Assessment</i>	<u>KPlus</u> <u>students</u>	<u>Non-KPlus</u> <u>students</u>	<u>Difference</u>	<u>t-value</u>	<u>Cohen's</u> <u>d</u>
	Avg. score (n)	Avg. score (n)			
English DIBELS ISF	16.68 (159)	15.24 (452)	1.44	1.52	.04
English DIBELS LNF	29.10 (159)	22.28 (452)	6.82	4.33***	.13
English DIBELS PSF	16.01 (159)	14.86 (452)	1.15	.97	.03
English DIBELS NWF	10.99 (159)	9.02 (452)	1.97	1.71*	.04
Spanish DIBELS ISF	11.69 (45)	13.18 (175)	-1.49	.95	.08
Spanish DIBELS LNF	14.36 (45)	17.03 (176)	-2.67	1.17	.11
Spanish DIBELS PSF	18.44 (45)	15.49 (175)	2.95	.91	.12
Spanish DIBELS NWF	8.81 (45)	8.26 (164)	.55	.26	.02

*p<.1, **p<.05, ***p<.01

Table 4 compares KPlus and non-KPlus students on KDPR and DIBELS assessments in the Spring. By this time, KPlus students have received about 10 months of instruction compared to about 8½ months for non-KPlus students. DIBELS results at the end of the year are similar to those in the middle of the year. KPlus students score statistically significantly higher on letter-naming fluency and nonsense word fluency, but there is no difference in the two groups on phoneme segmentation. In addition, effect sizes are quite small across the board. There are no statistically significant differences on any Spanish DIBELS sub-test.

**Table 4: Differences between KPlus students and Non-KPlus students
Spring of Kindergarten: Reading, Math, and Social Skills**

<i>Assessment</i>	<u>KPlus</u> <u>students</u>	<u>Non-KPlus</u> <u>students</u>	<u>Difference</u>	<u>t-value</u>	<u>Cohen's</u> <u>d</u>
	Avg. score (n)	Avg. score (n)			
KDPR Reading (Cohorts I & II)	55.20 (127)	52.67 (434)	2.54	5.68***	.12
KDPR Reading (Cohort III)	32.35 (51)	29.63 (221)	2.72	6.30***	.34
KDPR Math (Cohorts I & II)	17.25 (125)	16.86 (435)	.38	1.63	.02
KDPR Math (Cohort III)	32.10 (51)	30.04 (221)	2.06	4.48***	.22
KDPR Social (Cohorts I & II)	22.58 (127)	21.80 (437)	.78	2.42*	.04
KDPR Social (Cohort III)	17.43 (51)	16.29 (221)	1.14	4.59***	.14
English DIBELS LNF	38.53 (162)	33.38 (510)	5.15	3.25***	.09
English DIBELS PSF	29.36 (162)	27.64 (510)	1.72	1.04	.03
English DIBELS NWF	20.67 (162)	17.55 (510)	3.12	2.06**	.06
Spanish DIBELS LNF	26.22 (45)	28.30 (184)	-2.08	.73	.07
Spanish DIBELS PSF	25.24 (45)	26.80 (184)	-1.56	.46	.06
Spanish DIBELS NWF	20.82 (45)	18.20 (184)	2.62	.86	.09

*p<.1, **p<.05, ***p<.01

However, KDPR results in Table 4 tell a more positive story. Examining all three subject areas, nearly all KDPR comparisons indicate that KPlus students score statistically significantly higher even after a full year of instruction. Effect sizes are largest for reading, and are in the small to moderate range. Results for math are inconclusive—for Cohorts I and II, the effect of Kindergarten Plus is not statistically significant. For Cohort III, the effect is highly statistically significant, but small. Kindergarten Plus also shows a statistically significant but small effect on social skills.

As with comparing KPlus and non-KPlus students at the start of the year, there is no clean comparison for the end of the year since non-KPlus students are not assessed in June. The best that can be done is to compare students at the end of their kindergarten year. The only assessment available for this is DIBELS PSF. The comparison in Table 5 looks at non-KPlus scores from the end of April and KPlus scores from the end of June. Again, this comparison

ignores any maturation and learning that may have taken place among non-KPlus in the two months' difference between test times. The difference between KPlus and non-KPlus students assessed in English is statistically significant with a very high effect size. The results are certainly less dramatic for students assessed in Spanish, but the difference is never-the-less sizable and in the same direction. These results are quite interesting considering that no differences were found between KPlus and non-KPlus students on this measure in either the Winter or the Spring. It may be that this skill was particularly emphasized during the latter part of Kindergarten Plus or that students assessed at this time, after a full year of school, are developmentally more likely to have acquired this skill. As this comparison only includes students in Cohort III, a relatively small number of children, further research is needed to substantiate these findings.

**Table 5: Differences between KPlus students and Non-KPlus students, Cohort III
End of Kindergarten Year: Reading**

	<u>KPlus</u> <u>students</u>	<u>Non-KPlus</u> <u>students</u>	<u>Difference</u>	<u>t-value</u>	<u>Cohen's</u> <u>d</u>
<i>Assessment</i>	Avg. score (n)	Avg. score (n)			
English DIBELS PSF	49.26 (27)	30.18 (186)	19.08	5.57***	.98
Spanish DIBELS PSF	34.10 (10)	29.27 (10)	4.83	.94	.18

*p<.1, **p<.05, ***p<.01

Finally, we can examine the long-term impact of Kindergarten Plus by examining district reading proficiency scores at the end of students' first grade year. Table 6 does this for Cohorts I and II. Since different assessments were used, the first two rows compare the percentage of students proficient on whichever assessment used for KPlus and non-KPlus students. The comparison finds no statistically significant difference for either English or Spanish. The bottom portion of Table 6 groups compares KPlus and non-KPlus students on the particular assessment that was used. These comparisons allow us to use a more precise measurement than proficiency level, the highest instructional level achieved by the student according to the assessment. There is no statistically significant differences with the exception of the DRA, which notably was the most commonly used assessment. The effect size is small. Importantly, however, the average instructional level for KPlus students is above the level needed for proficiency, while the average level for non-KPlus students is not.

**Table 6: Differences between KPlus students and Non-KPlus students, Cohorts I and II
End of First Grade: Reading**

	<u>KPlus</u> <u>students</u>	<u>Non-KPlus</u> <u>students</u>	<u>Difference</u>	<u>t-value</u>	<u>Cohen's</u> <u>d</u>
<i>Percent Proficient</i>					
All English assessments	50% (82)	45% (229)	5	.71	.01
All Spanish assessments	33% (27)	41% (111)	-8	.77	.02
<i>Highest Instructional Level</i>					
DRA (Cohorts I & II)	17.96 (50)	15.17 (157)	2.78	1.78*	.07
ARI (Cohort I)	1.00 (13)	1.13 (31)	-.13	.31	.02
TPRI (Cohort I)	.89 (19)	.88 (41)	.01	.18	.01
Spanish DRA -EDEL (Cohorts I and II)	10.60 (20)	10.74 (90)	-.14	.08	.01
Spanish TPRI - Tejas Lee (Cohort I)	.71 (7)	.90 (21)	.19	.97	.08

*p<.1, **p<.05, ***p<.01

Formative Evaluation

Teacher interviews largely corroborated the assessment information above. During both sets of interviews, teachers noted the social and academic improvement of their Kindergarten Plus students compared to other students, noting that KPlus students improved their writing; phonemic awareness; knowledge of letters and words; and math. Just as importantly, teachers discern that Kindergarten Plus improves students' social skills, particularly their level of confidence, level of comfort, and behavior in school.

Teachers were asked to comment on a number of factors that may influence Kindergarten Plus' overall success in terms of both student attendance and academic achievement. Chief among them are: parental involvement, type of students, administrative support, teacher qualifications, and the start of the regular school year.

Parental and family involvement. Some teachers suggest that parents enjoy having their children in a special class and are particularly involved in their students' educations, at least ensuring that homework and nightly reading is completed. One teacher described the group of parents as "close-knit". Some teachers encouraged family involvement, arranging special "sibling days" when family members could join the kindergarteners for lunch. However, other teachers believe parent involvement is similar to that in other kindergarten classes.

While teachers claim very high attendance in the portion of Kindergarten that takes place before school starts, after the Kindergarten year, more students drop the program. Teachers attributed this to student and parent burn-out, especially when siblings have begun their summer vacation,

and to family trips. While some teachers have parents sign a “letter of commitment,” they are not enforceable.

Type of students. Teachers agree that Kindergarten Plus is effective for students at all academic levels – those that are already ahead continue to grow; those that are behind are given the time they need to improve. They expressed appreciation for the diversity of children in the program and believe the program should be available to all levels and types of kids. However, teachers agree that students are given fewer opportunities for learning at home benefit the most.

Teachers invariably mention younger children (four year olds or very young five year olds) as requiring more time and support. Since school begins earlier, there are a few more of these students than usual. Teachers believe Kindergarten Plus allows these students the extra time they may require to learn school rules and expectations.

Administrative support. Teachers are universally pleased with school support they receive. School administrators arrange (at least in some cases) transportation to and from school, breakfast and lunch, and materials. Teachers also have been pleased with the funding and non-prescriptive nature of instructions from TLS. Teachers do request more help with recruitment, a time-consuming task, as well as general publicity about the program within the district. There has also been some confusion about the expectations for testing, especially which sub-tests should be administered during the assessment windows outside the regular school year.

Start of the regular school year. Unavoidably, when the regular school year begins, “new” children are added to the Kindergarten Plus classrooms. This tends to “slow the class down” while the new students catch up. One teacher stated she did not cover very much academic material until the start of the regular school year to avoid this problem.

Teacher qualifications. Uniformly, teachers did not believe that any extra professional development is necessary for Kindergarten Plus as long as teachers have a background in early childhood. Notably, however, participating teachers are very qualified. Most if not all teachers in this program have Master’s degrees, more than 15 years of experience in early childhood, and one or more endorsements.

Teachers did not feel they suffered from burn-out from this program, but rather the opposite. As one said, “I teach 180 days just so I can get to the 40.” While they would like to get together with each other more often to share their experiences and find support, they recognize their time is short already. One teacher suggested teacher mentoring or initial professional development, if only to cover assessment and logistical information. Another teacher suggestion is an end-of-the-year celebration combining all the Kindergarten Plus classrooms.

CONCLUSIONS

Kindergarten Plus appears to be meeting the goals of improving students’ literacy, math and social skills. Evidence suggests that students enrolling in Kindergarten Plus may be less academically prepared than students that do not enroll in the program. Most data suggest Kindergarten Plus students stay ahead in math, literacy and social skills throughout the school year, though effect sizes tend to decrease over the school year, then rise dramatically after the

extra days after the end of the school year. There is some evidence that the impact of Kindergarten Plus continues at least until the end of first grade, though the effect may be weak.

Participating teachers are quite certain Kindergarten Plus has a strong, positive influence on students both academically and socially, particularly for students that are behind. One challenge they face is a comparatively large number of students that are quite young when they begin, as these students tend to require more of teachers' time when first acclimating to school. Another important challenge is incorporating other students when the school year begins.

LIMITATIONS

This research draws upon a quasi-experimental design, rather than being a true experiment. However, comparisons found no demographic differences between KPlus and non-KPlus students; and, if anything, KPlus students began school less prepared than non-KPlus students. Other factors may threaten the study's internal or external validity. The assessments used in this report are somewhat subjective for some items, and it could be that KPlus teachers rated their students higher or administered the assessment differently than teachers of non-KPlus students. While this report covers three years of data, a relatively small percentage of kindergarten students participate in Kindergarten Plus—just four classrooms per year, representing only six different teachers. Only five schools are represented in this analysis. Some analyses rely on only one or two years of data. The KDPR measure changed over the course of the study. Finally, the DIBELS assessment is a screening, rather than a comprehensive test. This could be the reason that oftentimes, KDPR measures detected differences between KPlus students and non-KPlus students when DIBELS measures did not.