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PREDICTIVE ASSESSMENT OF READING (PAR) AND ACCELERATED LEARNING PROGRAM (ALP) K-2 LITERACY PROGRAM 2004-05

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ABSTRACT

This evaluation examined 1,524 students in grade 1 at 13 Wake County Public School System (WCPSS) schools that participated in the Predictive Assessment of Reading (PAR) study in 2004-05. It also examined their participation in the Accelerated Learning Program K-2 Literacy Program during 2004-05. Both literacy initiatives focused on identifying students in need of additional assistance and providing support to those students. Student success was measured by the PAR assessment and WCPSS instructional book levels. The PAR assessment was used to determine the benefit of PAR only and PAR plus ALP K-2, the correlation of the two instruments, and whether PAR and ALP K-2 identified the same students as at-risk. Although the experimental and control groups saw similar results overall, students who participated in the ALP K-2 program saw greater gains among the experimental group. While PAR participants showed substantial improvement on the PAR assessment, ALP K-2 participants showed similar gains on book level with or without full PAR support. There was a significant positive relationship between students' performance on the PAR assessment and book level and a substantial overlap in the students identified as at-risk of failure by both programs.

SUMMARY

This report examined the success of Wake County Public School System (WCPSS) students in two literacy initiatives focused on identifying students in need of additional assistance:

Predictive Assessment of Reading (PAR) and Accelerated Learning Program K-2 Literacy Program (ALP K-2). This evaluation focused on 1,524 grade 1 students at 13 WCPSS schools that participated in the PAR study in 2004-05 in terms of their participation in

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the PAR study and/or ALP K-2. Both literacy programs focused on identifying students in need of additional assistance and providing support to those students. Between February 2004 and May 2005, 827 1st-grade students participated in the PAR study; 114 PAR participants also participated in ALP K-2. An additional 112 1st-grade students participated in ALP K-2 but not PAR.

Although the ALP K-2 program focuses on students with multiple risk factors, the schools that participated in the PAR study were volunteers. The voluntary sample of WCPSS elementary schools does not constitute a representative sample. Thus, students within the two initiatives differ demographically: a larger percentage of ALP K-2 students were in groups with greater risk factors while the opposite was true for PAR participants.

Five key questions were asked in order to examine student success as measured by the PAR assessment score and instructional book level. These measures were used to determine the benefit of PAR only and PAR plus ALP K-2, to check the correlation of WCPSS's instructional book levels with the nationally normed PAR assessment, and to determine the extent to which PAR and ALP K-2 identified the same students as at risk.

Question 1: Did students in the schools that formed the experimental PAR group show greater academic growth on the PAR assessment than those in the PAR control group?

Personnel in schools that piloted PAR received training in how to administer and interpret the PAR assessment as well as a "Starter Kit" of instructional supports. Staff at the experimental group of schools received additional training from WCPSS staff in use of the instructional strategies to support students. The key hypothesis of the PAR study was that this additional support would lead to greater academic growth for those students attending schools that formed the experimental group compared to the control group.

Both PAR groups showed substantial improvement in PAR results relative to the national norms. However, gains for the PAR experimental and control groups were similar, suggesting the additional training provided did not increase gains. Thus, the provision of the PAR information, in combination with regular WCPSS literacy instruction, appeared to be effective.

Question 2: Did ALP K-2 students show growth on PAR? Was growth greater for those in the experimental group versus those in the control group?

ALP K-2 students who participated in the PAR study did show improved percentile scores on the PAR assessment (approximately 10 points). ALP students in the PAR experimental group showed significantly greater improvement than those in the control group (12.3* points versus 8.8* points, respectively). Among non-ALP K-2 students, the experimental and control groups experienced similar gains. This suggests that the extra training on how to support struggling students was more helpful with the students at higher risk of school failure (as identified by the ALP K-2 program). This is important, given that PAR has been found to be predictive of End-of-Grade (EOG) achievement.

*Revised on November 9, 2006 to reflect correct percentile points.

Question 3: Did ALP K-2 students who participated in PAR have greater book-level gains than students only receiving ALP K-2?*

Students showed similar gains on book level with or without PAR support. Thus, while PAR may help improve targeted skills, the book-level instrument did not reveal greater gains in reading comprehension when PAR was fully utilized. Although PAR has been found to predict later reading achievement, the WCPSS book-level instrument was not sensitive to any contribution PAR may have made to more general reading comprehension skills.

Question 4: Was there a relationship between PAR assessment scores and book-level scores?

Scores on the PAR assessment were positively correlated with book-level ratings. Only 5% of those identified as at grade level based on book-level ratings were considered below average on the PAR assessment. However, the match was not as close for at-risk students. Twenty-eight percent of the students identified as low on instructional book level in May 2004, and 39% of those identified as low on book level in May 2005, scored at or above grade level on the PAR assessment. Thus, WCPSS is more likely to over-identify students for additional assistance using the instructional book level than to overlook a child who needs support.

The PAR assessment and instructional book level assess risk with different measures related to reading ability. These results support the notion that instructional book-level ratings measure more general, or more complex, reading skills than the PAR assessment. Students with below grade-level book levels and above-average PAR scores may grasp the more straightforward skills assessed with the PAR assessment, but have difficulties related to comprehension or other skills reflected in their book level. Finally, it suggests that WCPSS standards are high, and that the book-level standard for grade 1 identifies students who would be considered average based on the national norms of the PAR.

Question 5: To what extent did PAR and ALP K-2 identify the same students as needing extra support?

Nearly all students identified as in need of assistance by the multiple criteria used for ALP K-2 were identified as below average on the PAR assessment, with most identified as quite low. However, fewer than half of those identified as quite low on the PAR were served in ALP K-2. Thus, ALP K-2 is not serving approximately 50% of the students identified at greatest risk by the PAR assessment.

Results suggest that students identified as at risk based on book level also tend to have needs based on PAR. However, PAR would identify additional K-1 students with high needs that are currently not addressed. Results therefore suggest that PAR might be a helpful screen at these early critical grades.

* Students who entered after February 2004 were not included in the full PAR study, but did receive the benefit of teacher training. Teachers were also given the option to assess entering students using the PAR assessment; however, this information was not included in the PAR study.

**PREDICTIVE ASSESSMENT OF READING (PAR) AND
ACCELERATED LEARNING PROGRAM (ALP)
K-2 LITERACY PROGRAM 2004-05**

CURRICULUM FRAMEWORK

Reading is an essential component in our daily lives and is considered by many to be the most important skill we teach our students. Scientifically based research has identified phonemic awareness, phonics, fluency, vocabulary, and comprehension as the five essential components of reading (Scott and Fagan, 2005). These components go together and should be seen as unified elements of a single instructional strategy. Shellard's (2001) review of current research revealed key characteristics of a high-quality reading program, which include:

- A balanced literacy approach at the early grades (skills-based and whole language instruction varying by student needs).
- Literacy instruction embedded across the curriculum.
- K-12 coordinated literacy instruction.
- Ongoing assessment.
- Training and support for teachers and principals.
- Additional support for struggling students.

A high-quality early reading program for all students should be supplemented with additional assistance for struggling students. Although there are a variety of methods for providing this support, Shellard (2001) identified some key features of successful approaches:

- Individualized or small-group instruction.
- Meaningful texts that are relatable to students.
- Opportunities to repeat reading passages.
- Predictable vocabulary and sentence structure.
- Instruction on strategies for deciphering text.

WCPSS has a strong emphasis on early intervention in reading. WCPSS Curriculum and Instruction Department (C&I) staff believe that students cannot succeed in any subject without strong reading skills. Furthermore, research indicates that early intervention is key if we are to succeed over time with at-risk students (Shellard, 2001). WCPSS has implemented several reading programs at the early grades in order to address this need. Since 2000-01, ALP K-2 has provided literacy support through local and Title I funds to all schools. Working in partnership with WCPSS, Frank Wood, Ph.D. of Wake Forest University School of Medicine conducted a study in 2004 and 2005 using the PAR assessment geared at predicting students' future reading proficiency. The study also utilized instructional tool kits developed by Wake Forest University School of Medicine and WCPSS.

STUDY DESIGN

Analyses completed for this report built on a study originally conducted by Wake Forest University School of Medicine and WCPSS staff regarding PAR assessments and instructional

toolkits. PAR is a normed instrument based on 20 years of research by Dr. Wood and a team of researchers in the neuropsychology department at Wake Forest University School of Medicine. The main purpose of the PAR study was to test the effectiveness of two levels of instructional support in addressing needs identified by the PAR assessment. The PAR study was conducted from February 2004 to May 2005. Elementary schools were invited to participate. Schools were then stratified by the percentage of students enrolled that received free or reduced-price lunches (FRL). Schools were randomly chosen to participate in the more limited or more extensive version of instructional support. Instructional staff were reluctant to test students with the PAR assessment without providing the results to the teacher with diagnostic information, which made it impossible to determine whether gains seen were due to PAR or other instructional support in WCPSS. Thus, the key hypothesis of the PAR study was whether the additional training provided to the experimental group by WCPSS led to greater increases in student academic performance than the more limited diagnostic information provided to those in the control group.

The additional analyses done for this study examined various combinations of students participating in the PAR study and/or students participating in ALP K-2 during 2004-05. In contrast to the PAR study, the additional analyses focused on students identified as at risk of school failure. The ALP K-2 program is available in all WCPSS elementary schools to assist students who are having difficulties with language arts. Eligibility is determined by instructional book-level performance, teacher judgment, and other factors. Student progress within ALP K-2 was measured by book level in grades 1 and 2 as assessed by the classroom teacher.

Having PAR and ALP K-2 data on students in need of instructional support provided an excellent opportunity to explore the value of PAR as well as some issues that had been raised about the reliability of the instructional book-level data. Analyses of ALP K-2 results for 2004-05, combined with those of prior years, raised several concerns with the book-level portion of the K-5 assessment instrument:

- Examination of fall-to-spring and spring-to-spring student results on book levels revealed significantly different patterns of progress, with fall-to-spring results showing much greater progress. Some program staff indicated that those served were truly the most needy, and that spring ratings were sometimes artificially high.
- Curriculum and Instruction (C&I) staff and literacy teachers indicated a lack of inter-rater agreement between some classroom and literacy teachers due to a difference in the texts used to assess students; the specificity of the rating scale used; a lack of sufficient coordination across teachers in some schools; and/or a shift in literacy teacher motivations regarding student placement in the fall versus rewarding student progress in the spring.
- Three years of data have shown that approximately 50% of students scored at or above grade level on book level in both the spring before and after participation in ALP K-2. Program staff, on the other hand, generally view the program as quite effective.

The goal of this report is to examine student success on two measures—PAR score and book level—to determine the benefit of PAR only and PAR plus ALP K-2 and as a cross-check of the

validity of book-level results for ALP K-2 students. In order to accomplish these goals, five key questions were examined:

1. With the added information and resources to enhance learning, did students in the experimental PAR group show greater academic growth on the PAR assessment than those in the PAR control group?
2. Did ALP K-2 students show growth on PAR? Was growth greater for those in the experimental group versus those in the control group?
3. Did ALP K-2 students who participated in PAR have greater book-level gains than students only receiving ALP K-2?
4. Was there a relationship between PAR assessment scores and book-level scores?
5. To what extent did PAR and ALP K-2 identify the same students as needing extra support?

PROGRAM DESCRIPTIONS

PAR Study

The main purpose of the PAR study was to test the effectiveness of instructional tools in addressing needs identified by the PAR assessment, since the value of PAR in predicting later reading achievement had already been established. The PAR study was conducted from February 2004 to May 2005. Thirteen of the original 14 WCPSS elementary schools that volunteered for the program completed the PAR study (see Attachment). PAR uses a student's phonemic awareness, fluency, single word reading, and vocabulary scores on the PAR test in K-3 to predict students' later reading achievement¹. The test provides immediate Web-based feedback on student performance on each of these specific reading skills and provides recommendations on interventions to improve weak student performance. The cost for the PAR program was \$6 per student with the agreement that WCPSS would participate in the study.

ALP K-2 Program

ALP K-2 provides an accelerated literacy program to students identified as at risk of failure and in need of academic assistance. It utilizes Early Connections materials published by Benchmark. Early Connections incorporates seven components of literacy: familiar reading, shared reading, phonetics connections, interactive or assisted writing, journal writing, guided reading, and content connections. The program primarily utilizes nonfiction materials, based on research indicating that struggling students tend to respond more positively to this genre than to fiction. Evaluation and Research's (E&R) Accelerated Learning Program (ALP) K-2 Evaluation 2002-03 report No. 04.11 provides additional information on the development and structure of the program.

In 2004-05, the ALP K-2 literacy program provided its fourth year of instruction to identified students. Student achievement was measured against established benchmarks on local assessments. ALP K-2 is funded primarily by Federal Title I funds, which require students be

¹ Grade 3 predictive scores have concurrent validity with the Woodcock-Johnson III Broad Reading (Wood, 2005) and reliability with R's above .90 (PAR: Predictive Assessment of Reading Research, p. 1).

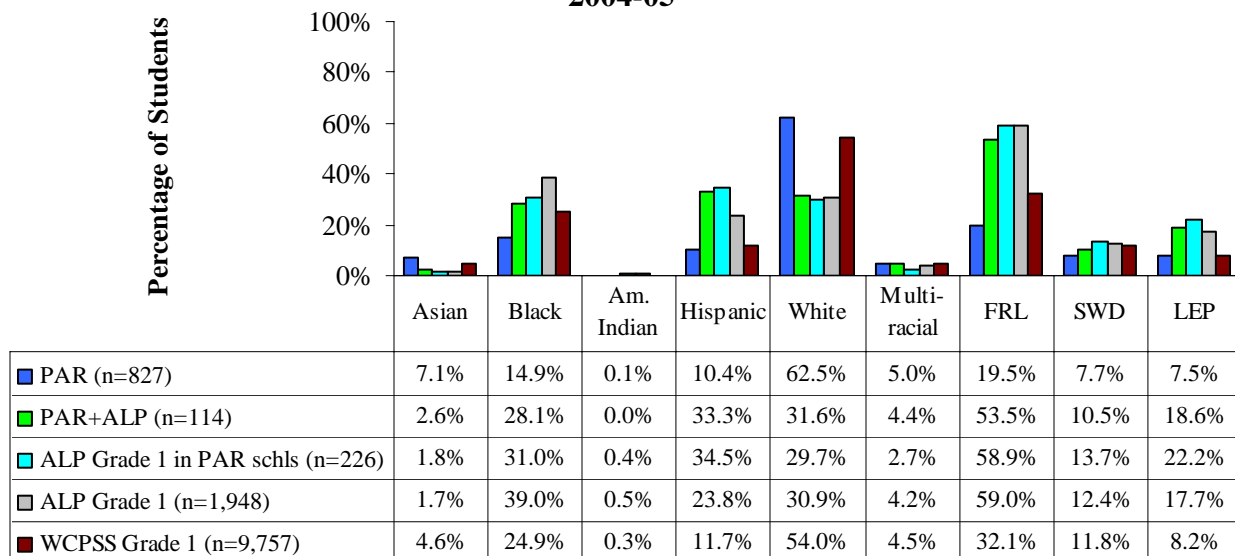
identified for service using multiple criteria. The multiple criteria used to assess student need include: scoring below grade level on the print concepts and book level based on locally set K-2 assessment guidelines, teacher observations, prior service in ALP K-2, retention status, service in special education and ESL programs, and additional test results collected during screening. Students were assigned need points for each of these criteria.

Demographics

Grade 1 students served in ALP K-2 and PAR were demographically different. ALP K-2 focuses on students at greatest risk of school failure in the system, while PAR was given to all students in the schools volunteering to participate in the study. Both groups differ demographically from WCPSS 1st-grade students as a whole (see Figure 1). ALP K-2 1st-grade students were more likely to have had high needs than the WCPSS grade 1 students overall, while PAR students were less likely to have needs than the overall population. Notable differences included:

- 15% of PAR students were Black/African American, while 39% of ALP K-2 students were Black/African American; these percentages differ from WCPSS overall (25%).
- 20% of PAR students and 59% of ALP K-2 students were FRL recipients, compared to 32% of WCPSS students.
- Similar percentages of students were Hispanic/Latino among the PAR students (10%) and WCPSS overall (12%), while a higher percentage of ALP K-2 students (24%) were Hispanic/Latino.
- Similar percentages of students were Limited English Proficient (LEP) students for PAR students and WCPSS students (8%), while a higher percentage of ALP K-2 students (19%) were LEP.

Figure 1
Demographics of Grade 1 Students
Served in PAR, ALP K-2, and WCPSS
2004-05



Data Source: May 2005 Student Locator, PAR data provided by Dr. Wood, and ALP K-2 2004-05 data

METHODS/INSTRUMENTS

School Sample

The original 14 WCPSS elementary schools that volunteered to participate in the PAR study were randomly divided within the FRL strata into control and experimental groups. FRL at the school level was stratified and schools were then randomly selected as control or experimental within each stratum (see Attachment). One school, Fuller Elementary, voluntarily discontinued the program during the course of the study. The findings presented in this report are on the remaining 13 schools.

Student Sample (PAR/ALP K-2)

Given that this report examines students participating in the PAR study and ALP K-2 in 2004-05, it is helpful to understand both the number of students participating in each effort separately and the number of students participating in both programs (see Table 1).

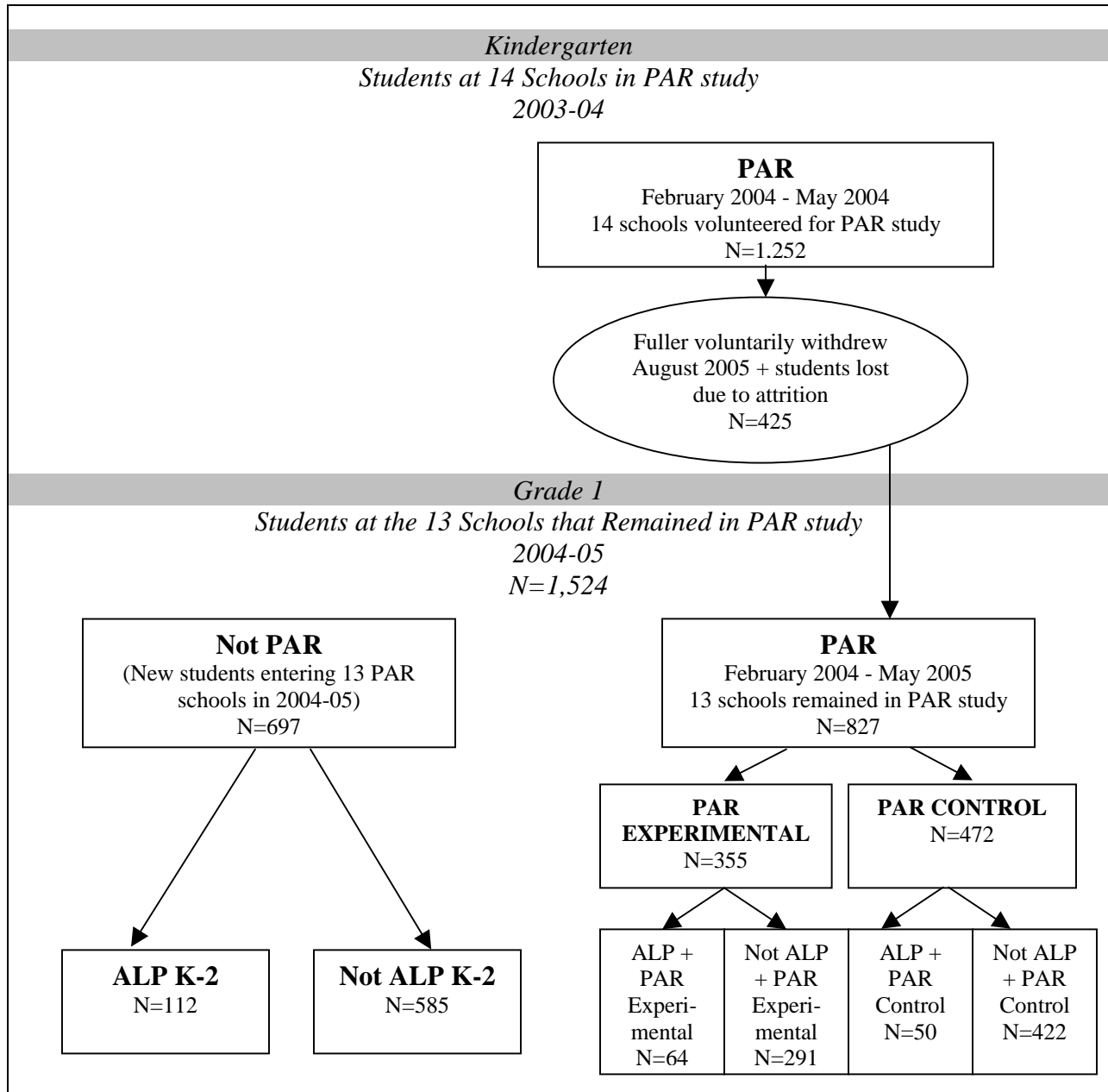
Table 1
Students in Grade 1
13 Elementary Schools that Participated in PAR study
2004-05 (N=1,524)

	ALP	Not ALP	Total
PAR	114	713	827
Not PAR	112	585	697
Total	226	1,298	1,524

Data Source: PAR data provided by Dr. Wood and ALP K-2 2004-05 data

Figure 2 diagrams the population of students for this report. Of the 1,524 students in grade 1 at the 13 schools participating in the PAR study in 2004-05, 827 participated in the full PAR study from February 2004 to May 2005. An additional 697 students in grade 1 entered one of the 13 schools participating in the PAR study after February 2004 and thus were not included as PAR participants. This group was helpful in examining ALP K-2 only versus ALP K-2 and PAR.

Figure 2
PAR and ALP K-2 Participants in 2004 and 2005



Data Source: PAR Report by Dr. Wood (2005), PAR data provided by Dr. Wood, and ALP K-2 2004-05 data

PAR Sample: Experimental vs. Control Groups

All schools that participated in the PAR study received training in how to administer the PAR assessment and the meaning of the feedback received on students (which reflected each student’s strengths and areas of need as well as the intensity of intervention service—whole group, small group, or one-on-one). All schools were given a "Starter Kit" created by staff at Wake Forest

University. This kit gave general suggestions on instructional strategies that might be used with students who had specific needs.

In addition, the experimental group received an instructional toolkit developed by WCPSS literacy staff, and also received extensive staff development involving training in reading strategies. The toolkit and training provided resources to extend the skills of those students identified as needing additional support in reading. Thus, the key hypothesis tested was that this additional support (training and toolkit) led to more academic growth on the PAR assessment for those in the experimental group compared to the control group. Since the main difference between the control and experimental groups was the additional training provided to teachers at the experimental schools, differences between the control and experimental group should be considered in terms of the amount of teacher training provided.

The PAR program selected all kindergarten students at the 13 schools participating in the PAR study in February 2004 regardless of need. Overall, 1,252 kindergarten students at each of the participating schools were administered the PAR test in February 2004 and again in May 2004. In May 2005, 827 of the original 1,252 students were administered the PAR test, due to Fuller Elementary’s voluntary withdrawal from the study in August 2005 and the natural attrition of students.

ALP K-2 Program Sample

ALP K-2 used multiple criteria to identify students most in need of program services, as required by Title I. The multiple criteria considered in selection into the ALP K-2 program included print concepts or book-level scores, teacher observations, prior service in ALP K-2, retention status, service in special education and English as a second language (ESL) programs, and additional test results collected during screening. Students were assigned points and ranked according to need based on their multiple criteria score. In 2004-05, the ALP K-2 program served 4,668 students (2,026 in grade 1). Overall, 226 of the ALP K-2 students in grade 1 attended the 13 schools participating in the PAR study, and 114 ALP K-2 students also participated in the PAR study from February 2004 to May 2005. Since these students have a PAR score for each administration of the PAR assessment (February 2004, May 2004, and May 2005), they will constitute the sample of ALP K-2 students in all examinations of the PAR assessment in this report (see Table 2).

**Table 2
PAR Participants by
PAR Group and ALP K-2 Sample Participation
2004-05**

	PAR Control	PAR Experimental	Total
ALP K-2	50	64	114
Not ALP K-2	422	291	713
Total	472	355	827

Data Source: PAR data provided by Dr. Wood and ALP K-2 2004-05 data

STUDENT ACHIEVEMENT RESULTS

Student achievement on PAR assessments for all students who participated was evaluated in two key ways: student gains between PAR assessments (February 2004, May 2004, and May 2005) and PAR assessment results compared to instructional book levels in May 2004 and May 2005.

Question 1: Did students in the schools that formed the experimental PAR group show greater academic growth on the PAR assessment than those in the PAR control group?

Both the experimental and control PAR groups showed substantial improvement in PAR results relative to the national norms. This suggests that the provision of the PAR information was helpful (although WCPSS regular instruction likely also contributed). The fact that gains for the PAR experimental and control groups were similar indicates the additional training received by the experimental group of schools did not increase gains beyond those seen by the control group.

PAR Assessment

The PAR score is standardized based on national percentile ranking. Table 3 displays the percentile ranking for each standardized PAR score. A PAR score of 100 represents the 50th percentile. Thus, students scoring greater than 100 perform better than the national average, while students scoring below 100 perform below the national average.

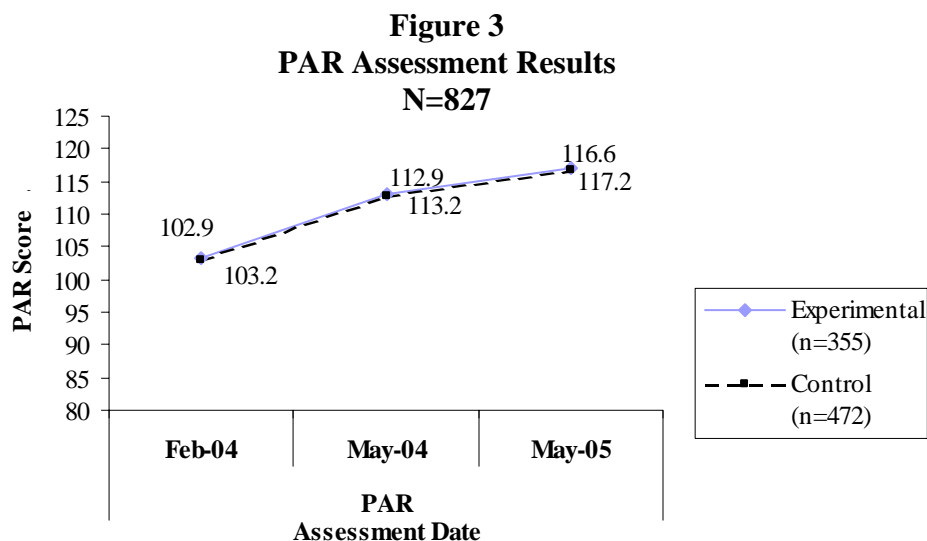
Table 3
Standardized PAR Scores by Percentile

Percentile	Score
Below 10 th	Below 82
Below 20 th	82-86
Below 30 th	87-92
Below 40 th	93-96
Below 50 th	97-99
50th	100
Above 50 th	101-103
Above 60 th	104-107
Above 70 th	108-112
Above 80 th	113-119
Above 90 th	Above 119

Data Source: PAR data provided by Dr. Wood

The overall PAR scores for WCPSS students participating in the PAR study in February 2004 were slightly above the national average. All kindergarten students enrolled in February 2004 in the 13 schools participating in the PAR study were given the PAR assessment. Both the control and experimental groups' scores increased substantially, from just over 100 (above the 50th percentile) in February 2004 to greater than 116 in May 2005 (above the 80th percentile). There was no significant difference between the control and experimental group scores (see Figure 3).

- Initial increases from February 2004 to May 2004 were greater than between May 2004 and May 2005.
- Experimental and control groups' mean PAR scores were similar in February 2004, May 2004, and May 2005.
- Experimental and control groups experienced similar gains in the mean from February 2004 to May 2004 and from May 2004 to May 2005.



Data Source: PAR data provided by Dr. Wood

Because we did not have a group tested with PAR that received no diagnostic information, it is not possible to separate the extent to which the improvement was due to PAR versus the regular WCPSS instructional program.²

Question 2: Did ALP K-2 students show growth on PAR? Was growth greater for those in the experimental group versus those in the control group?

ALP K-2 students—at greater risk of school failure—who participated in the PAR study did show improved percentile scores on the PAR (approximately 10 points). The PAR experimental group showed significantly greater improvement than the control group (12.3 points versus 8.8* points, respectively). Students not participating in ALP K-2 experienced similar gains for both the experimental and control groups. Thus, additional training on how to help struggling students may have been more helpful for staff working with this group of students at higher risk of school failure than for the overall population in these schools.*

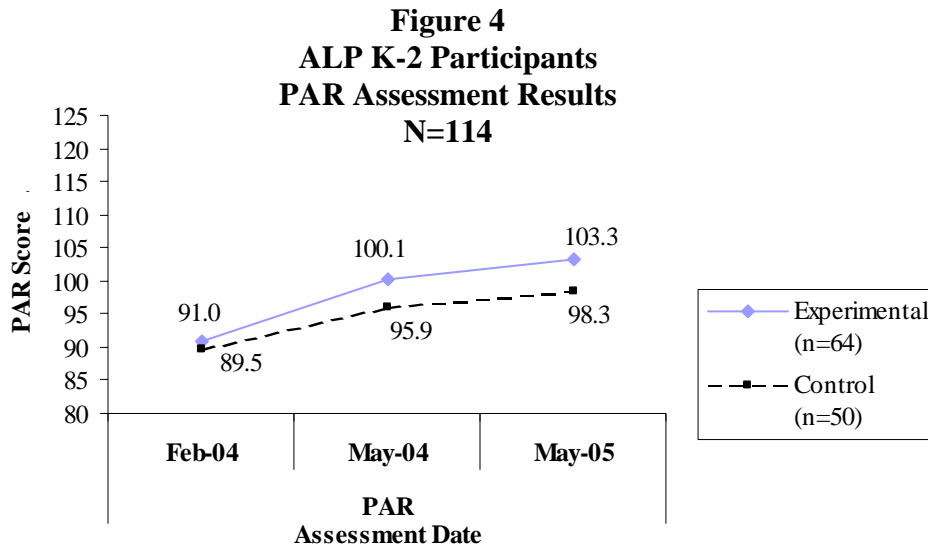
Although PAR students who **did** participate in the ALP K-2 program (experimental and control groups) also experienced increases between February 2004 and May 2005, the experimental group experienced significantly greater gains ($p=.05$)³ than the control group (see Figure 4).⁴

² Scores above 113 in grade 1 represent the average score for a 2nd- grade student.

³ Significance based on a t-test on the difference of mean PAR score for control versus experimental groups.

*Revised on November 9, 2006 to reflect correct percentile points.

- Similar to the overall PAR population and PAR students who did not participate in ALP K-2, PAR students participating in ALP K-2 experienced initial increases between February 2004 and May 2004 greater than between May 2004 and May 2005.
- Experimental and control groups' mean PAR scores were similar in February 2004 (below the 30th percentile).
- Experimental group experienced higher mean gains from February 2004 to May 2004 (moving from below the 30th percentile to the 50th percentile) and from May 2004 to May 2005 (moving from the 50th percentile to above 50th percentile) than the control group, which remained below the national average (moving from below the 30th percentile in February 2004 to below the 50th percentile in May 2005).



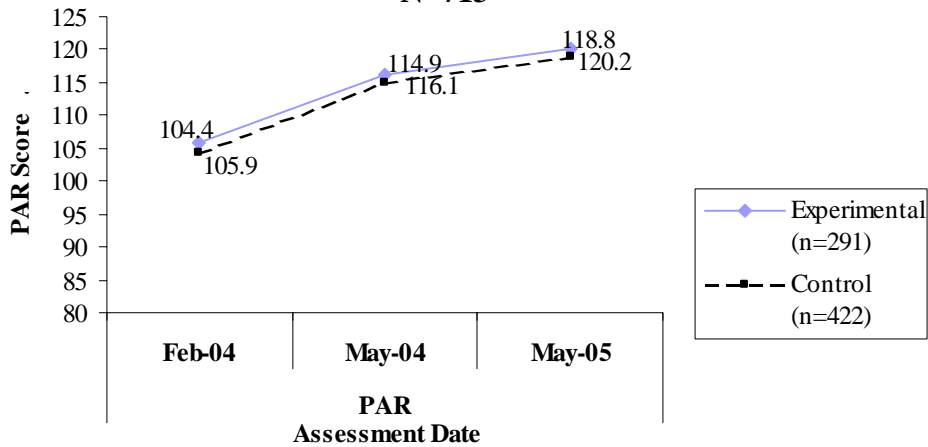
Data Source: PAR data provided by Dr. Wood

Many PAR students **did not** participate in the ALP K-2 program because they did not demonstrate the same level of risk of school failure based on the multiple criteria used for ALP identification. Average scores on the PAR were higher for this group than ALP K-2 students. Both experimental and control groups experienced increases similar to the overall PAR results. Results for the control and experimental groups were also not significantly different. Figure 5 shows the gains for PAR students who **did not** participate in the ALP K-2 program.

- Similar to the overall PAR population the initial increase from February 2004 to May 2004 was more than between May 2004 and May 2005.
- Experimental and control groups' mean PAR scores were similar in February 2004, May 2004, and May 2005 (above the 60th percentile).
- Experimental and control groups experienced similar gains in the mean from February 2004 to May 2004 and from May 2004 to May 2005.

⁴ Of the 226 ALP-K2 participants within the 13 PAR schools, 112 students did not participate in the PAR study because they enrolled after the PAR study began in February 2004. Thus, for ALP K-2 participants the PAR assessment results presented in this report reflect the 114 ALP K-2 students who also participated in the PAR study.

Figure 5
Non-ALP K-2 Participants
PAR Assessment Results
N=713

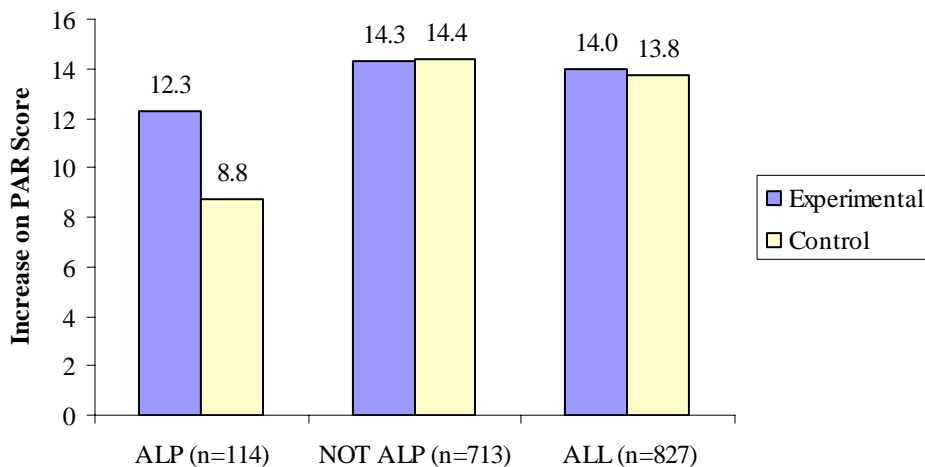


Data Source: PAR data provided by Dr. Wood

Figure 6 displays the gains in mean PAR score by ALP K-2 participation in both experimental and control groups from February 2004 to May 2005.

- ALP students experienced smaller gains in PAR scores from February 2004 to May 2005 than non-ALP students.
- Among ALP students, the experimental group experienced greater gains from February 2004 to May 2005 than the control group.
- Non-ALP students in the experimental and control groups experienced similar gains.
- Due to the small percentage of ALP K-2 participants in the PAR study, the overall PAR results were very similar to the non-ALP K-2 results, with control and experimental groups experiencing approximately the same gains.

Figure 6
Gains in Mean PAR Score by ALP II Participation
February 2004 to May 2005
N=827



Data Source: PAR data provided by Dr. Wood

Table 4 shows that overall PAR control and experimental groups had similar results; both groups began the program in February 2004 with a mean PAR score above the 50th percentile (101-103) and ended in May 2005 with a mean PAR score above the 80th percentile (113-119). Therefore, students improved their standing relative to the national norm by about 30 percentile points. Students who also participated in the ALP K-2 program began the program with a mean PAR score below that of students not participating in ALP K-2 and below the overall mean for all PAR students. Although the experimental and control groups saw similar results overall, students who participated in the ALP K-2 program saw greater gains among the experimental group.

Table 4
PAR Group by ALP Sample Participation
PAR Percentiles
2004-05

	Control			Experimental			N=
	Feb 04	May 04	May 05	Feb 04	May 04	May 05	
ALP K-2	Below 30 th	Below 40 th	Below 50 th	Below 30 th	50 th	Above 50 th	114
Not ALP K-2	Above 60 th	Above 80 th	Above 80 th	Above 60 th	Above 80 th	Above 90 th	713
Total	Above 50 th	Above 80 th	Above 80 th	Above 50 th	Above 80 th	Above 80 th	827

Note: Bold text indicates 80th percentile or greater.
 Data Source: PAR data provided by Dr. Wood and ALP K-2 2004-05 data

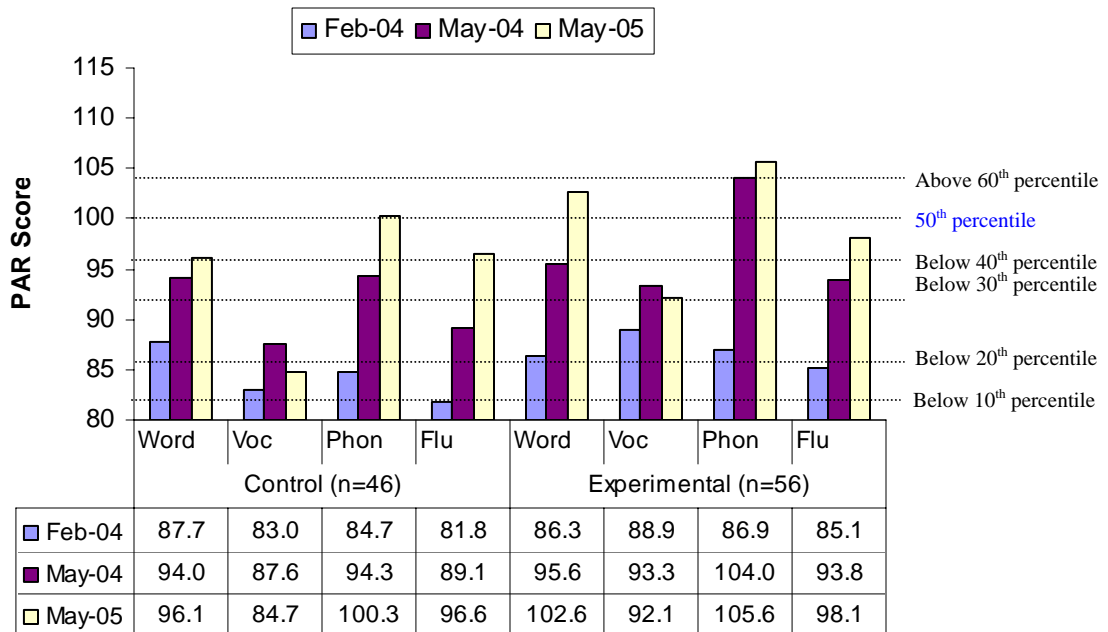
The PAR assessment focused on four subtest areas—phonemic awareness, fluency, single word reading, and vocabulary—to predict students’ 3rd-grade reading ability. The subtest results for the 316 students identified as at risk based on a predicted PAR score of <99 are presented in Figures 7 and 8. The results are shown separately for the 114 students participating in ALP K-2 and PAR and for the 713 students participating only in PAR, because students participating in ALP K-2 and PAR showed a significant difference between the experimental and control groups.

ALP/PAR Participants

Figure 7 shows the PAR subtests for the experimental and control groups for students in PAR and ALP K-2 within the 13 PAR schools in 2004-05. Students participating in both ALP K-2 and PAR began and ended the program with lower scores overall than students only participating in PAR. This is due to the considerable overlap between ALP K-2/PAR participants and PAR students identified as at risk. Among students in ALP K-2 and PAR:

- In February 2004, students scored lowest on fluency and highest on vocabulary.
- Among control and experimental groups, students experienced the least improvement in vocabulary (1.8 and 3.1, respectively).
- Students in both the control and experimental groups saw the greatest gains in fluency (14.8 and 13, respectively).

Figure 7
ALP K-2/PAR Participants 2004-05
Mean PAR Subtest Standardized Scores for
Experimental and Control Groups



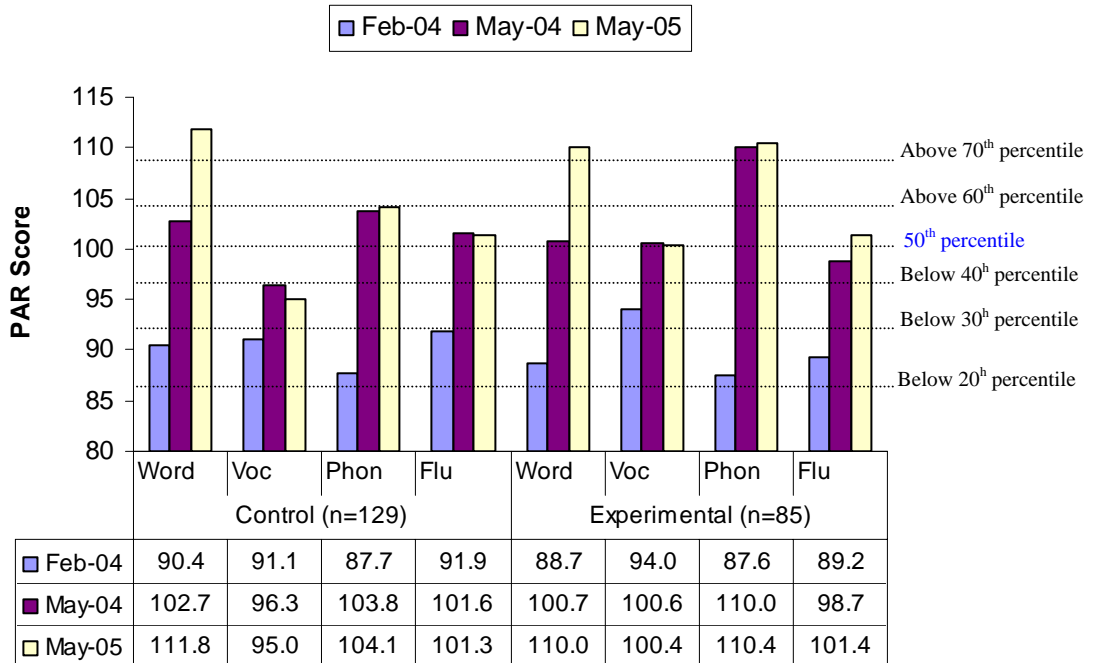
Data Source: PAR data provided by Dr. Wood

Non-ALP/PAR Participants

Figure 8 shows the PAR subtests for the experimental and control groups for students in PAR not served by ALP K-2 in 2004-05.

- In February 2004, both students in the control and experimental groups scored lowest on phonics.
- In February 2004, students in the control group scored highest on fluency while students in the experimental group scored highest on vocabulary.
- Among control and experimental groups, students experienced the least improvement in vocabulary (3.8 and 6, respectively).
- Students in the control group experienced the greatest gains in single word reading (21.4), while students in the experimental group saw the greatest gains in phonics (22.7 points).

Figure 8
PAR Participants 2004-05
Mean PAR Subtest Standardized Scores for
Experimental and Control Groups



Data Source: PAR data provided by Dr. Wood

Question 3: Did ALP K-2 students who participated in PAR have greater book-level gains than students only receiving ALP K-2?⁵

Students showed similar gains on book level with or without full PAR support. ALP K-2 student gains were assessed using book level, because PAR assessment scores were not available for ALP K-2 students not participating in the PAR study. Similar book-level gains among ALP K-2 student participating in PAR and those not participating in PAR suggest that PAR may be helpful to extend other skills, but not those related to comprehension and fluency as measured by the book-level instrument.

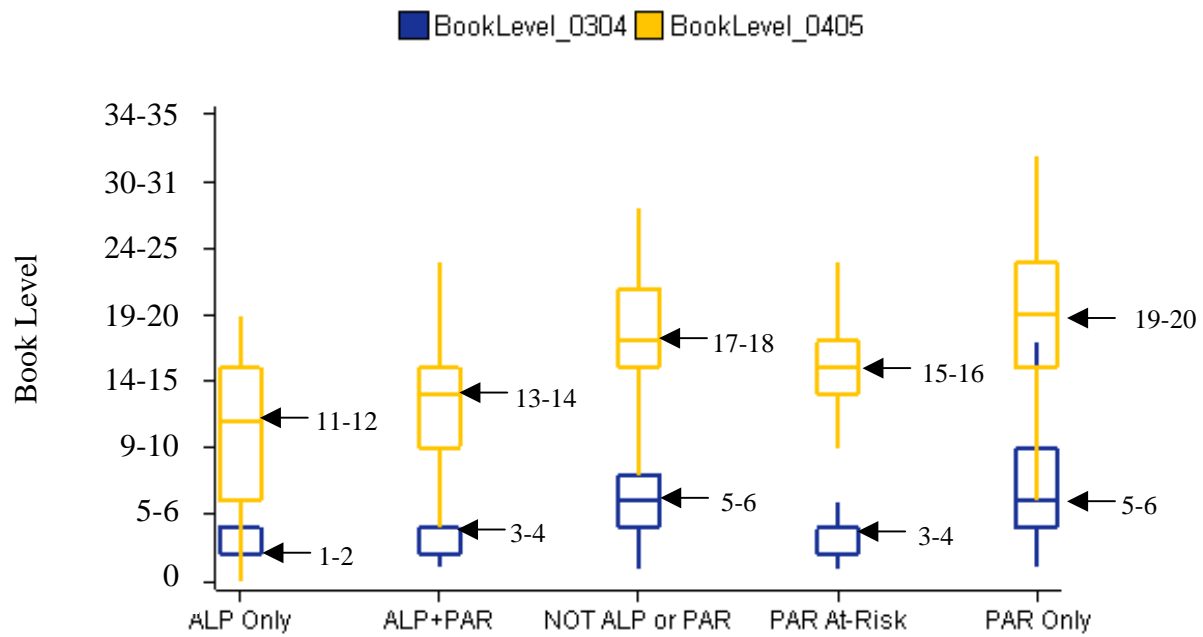
Although students participating in the ALP K-2 program only had a slightly lower median book level both in 2003-04 and 2004-05 than students participating in both ALP K-2 and PAR, they experienced similar median gains. Figure 9 displays the median book level of students by ALP K-2 participation in 2004-05 and PAR status in 2003-04 and 2004-05.⁶ Given the at-risk group that composed the ALP K-2 and PAR groups, it is not surprising that these groups had lower initial book levels. It is, however, disappointing that they experienced slightly smaller gains than the PAR only or not PAR or ALP K-2 groups, as larger gains would be necessary for these students to catch up with their peers.

- Students participating in ALP K-2 and not PAR increased six book levels, from a median book-level score of 1-2 in 2003-04 to 13-14 in 2004-05.
- Students participating in ALP K-2 and PAR increased five book levels, from a median book-level score of 3-4 in 2003-04 to 13-14 in 2004-05.
- Students participating in PAR and not ALP K-2 increased six book levels, from a median book-level score of 5-6 in 2003-04 to 17-18 in 2004-05.
- PAR students identified as at risk increased six book levels, from a median book-level score of 3-4 in 2003-04 to 15-16 in 2004-05.
- Students participating in neither the ALP K-2 program nor the PAR study increased seven book levels, from a median book-level score of 5-6 in 2003-04 to 19-20 in 2004-05.

⁵ * Students who entered after February 2004 were not included in the full PAR study, but did receive the benefit of teacher training. Teachers were also given the option to assess entering students using the PAR assessment; however, this information was not included in the PAR study.

⁶ Median, the number where half of the scores fall above and half fall below, is used instead of the mean because book level is ordinal data.

Figure 9
Book Level by ALP K-2 and PAR Participation
2003-04 and 2004-05



	ALP Only	ALP+PAR	NOT ALP or PAR	PAR At-Risk	PAR Only
2003-04					
75 th Percentile	3-4	3-4	7-8	3-4	9-10
50 th Percentile	1-2	3-4	5-6	3-4	5-6
25 th Percentile	1-2	1-2	3-4	1-2	3-4
2004-05					
75 th Percentile	15-16	15-16	21-22	17-18	23-24
50 th Percentile	11-12	13-14	17-18	15-16	19-20
25 th Percentile	5-6	9-10	15-16	13-14	15-16

Note: The bottom and top of the box represent the 25th and 75th percentiles, respectively. The arrow points to the 50th percentile or median book-level score.

Data Source: PAR data provided by Dr. Wood and ALP K-2 2004-05 data

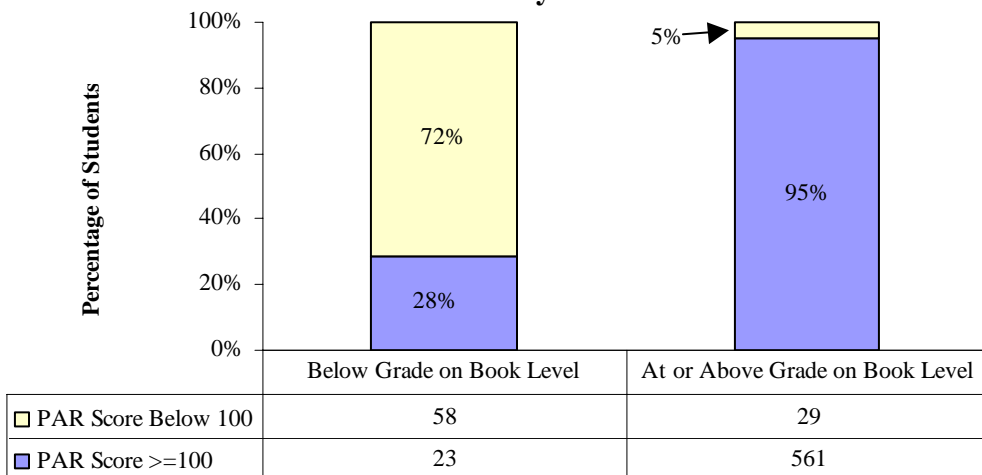
Question 4: Was there a relationship between PAR assessment scores and book-level scores?

Scores on the PAR were positively correlated with book-level ratings. Only 5% of those identified as at grade level based on book-level ratings were considered below average on the PAR assessment. However, the match is not as close for at-risk students. Twenty-eight percent of the students identified as low on instructional book level in May 2004, and 39% of those identified as low on book level in May 2005, scored at or above grade level on the PAR assessment. Thus, WCPSS is more likely to identify additional students for potential service using the instructional book level than it is to overlook a child who needs support. The two instruments assess risk using different measures related to reading ability. Thus, the instructional book-level ratings measure a more complex combination of skills than the PAR assessment. The additional students above average on the PAR assessment and below grade based on book level may grasp the more straightforward skills assessed with the PAR but have difficulties related to comprehension or other skills reflected by their book level. Finally, it suggests that WCPSS standards are high, and that the book-level standard for grade 1 identifies students who would be considered average based on the national norms of the PAR assessment.

PAR Assessment Score May 2004

There was a significant positive relationship between students’ performance on the PAR assessment and book level.⁷ Figure 10 reveals that most students (95%) who scored above grade level on their book level in May 2004 also scored 100 or greater on the PAR assessment, while 72% of students who scored below grade level on their book level in May 2004 also scored below 100. Thus, in instances where the PAR score and book level did not match, there was a greater likelihood that book level over-identified students as at risk when compared to the PAR assessment.

**Figure 10
Standardized PAR Score by Book Level
May 2004**



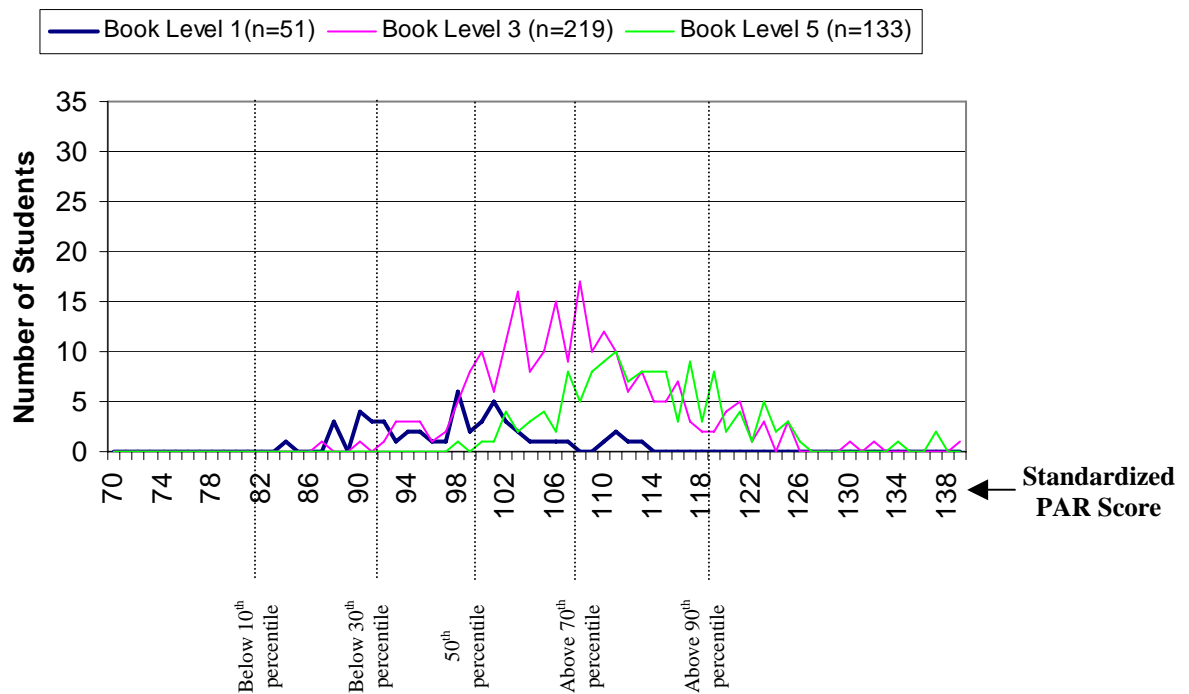
Data Source: PAR data provided by Dr. Wood and ALP K-2 2004-05 data

⁷ Significant based on a Spearman Correlation Coefficient of $r_s=.76$, $p<.0001$.

A book level of 3-4 is considered the grade-level standard at the end of kindergarten. Figure 11 displays the frequency of PAR scores for students at or near this grade-level standard in May 2004.

- Students scoring a book level of 1-2 or below grade level had a PAR mean score of 98.1 (below the 50th percentile).
- Students scoring on grade level based on their book level (3-4) had a mean score of 107.6 (above the 60th percentile).
- Students scoring a book level of 5-6 or just above grade level had a mean score of 113.3 (above the 80th percentile).

Figure 11
Standardized PAR Score by Book Level
May 2004



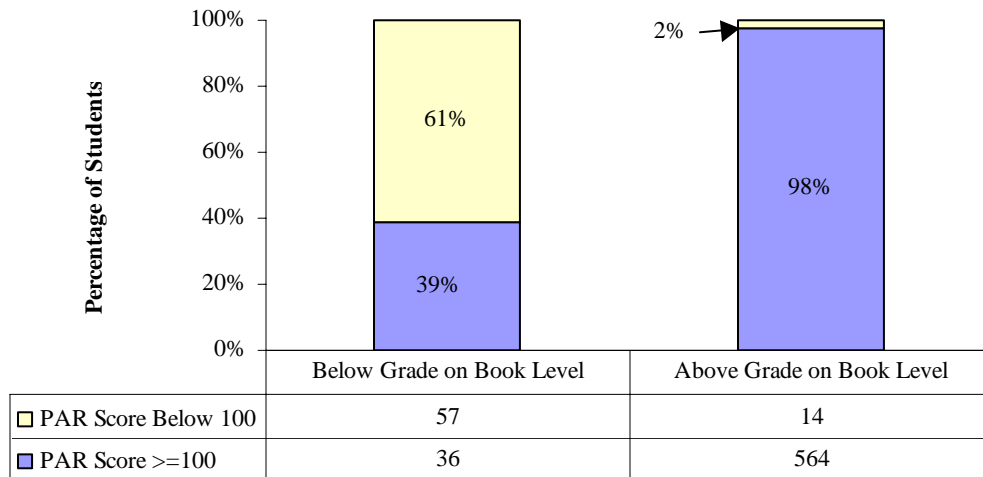
Data Source: PAR data provided by Dr. Wood and WCPSS 2004-05 K-5 Assessment

Thus, WCPSS has high standards for book-level attainment at grade 1. Even our students considered below grade level on the book level scored close to the national average on the PAR.

PAR Assessment Score May 2005

Figure 12 reveals that most students (98%) who scored above grade level on their book level in May 2005 also scored 100 or greater on the PAR assessment, while 61% of students who scored below grade level on their book level in May 2005 also scored below 100. However, 28% of the students identified as low on instructional book level in May 2004 and 39% of those identified as low on book level in May 2005, scored at or above grade level on the PAR. Based on students' instructional book level, WCPSS is more likely to identify additional students as at risk and in need of support than to overlook a child who needs support. Thus, similar to the results for May 2004, in instances where the PAR and book level did not match there was a greater likelihood that a student was identified as below grade level on book level, (39%) and not PAR than below average on PAR (2%) and above grade on book level.

Figure 12
Standardized PAR Scores by Book Levels
May 2005

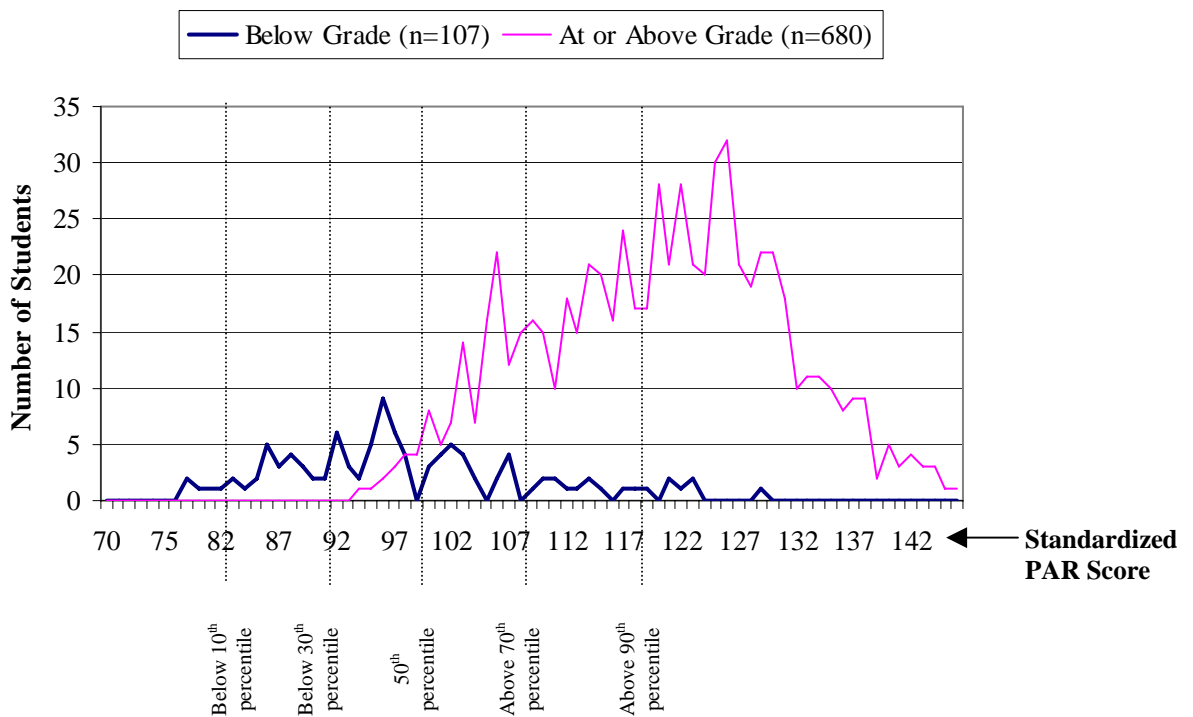


Data Source: PAR data provided by Dr. Wood and WCPSS 2004-05 K-5 Assessment data

Figure 13 displays the frequency of PAR scores by grade-level status based on book levels in May 2005. The majority of WCPSS 1st-grade students scored at or above the 90th percentile on the PAR assessment.

- Students scoring below grade level based on their book level scored a mean of 98.2 (slightly below the 50th percentile).
- Students scoring at or above grade level based on their book level scored a mean of 119.9 (above the 90th percentile).

Figure 13
Standardized PAR Score
by Grade Level Status (Book Level)
May 2005

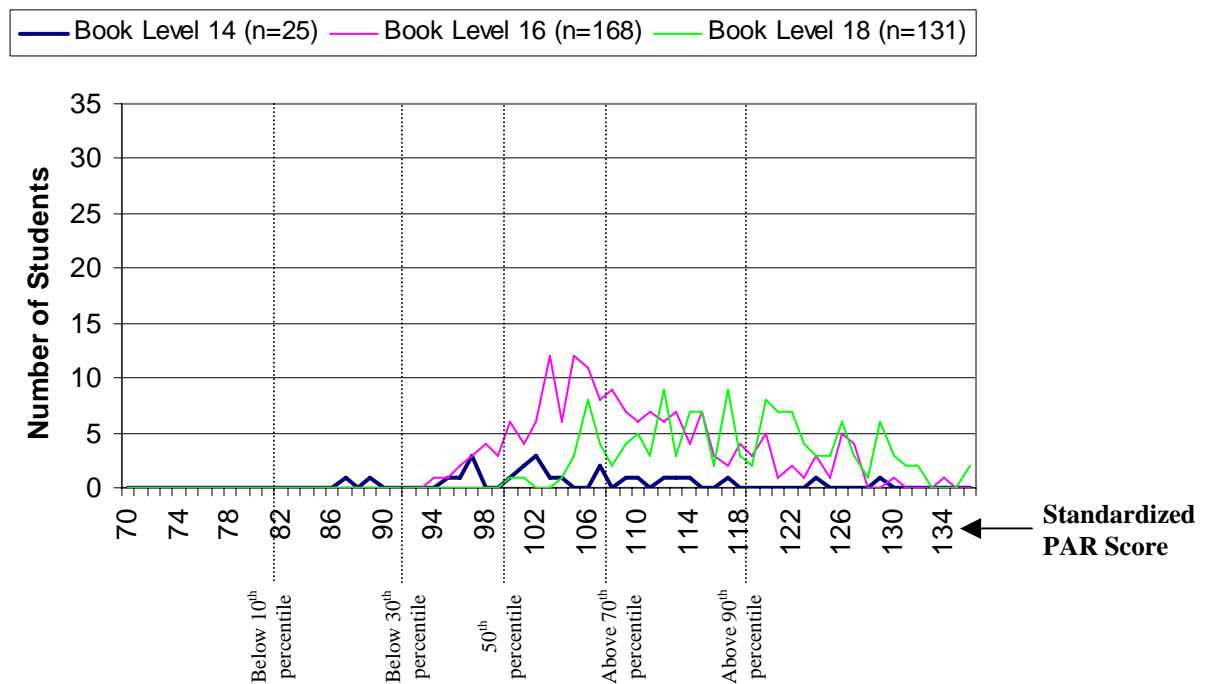


Data Source: PAR data provided by Dr. Wood and WCPSS 2004-05 K-5 Assessment data

Book level of 15-16 is considered the grade-level standard at the end of grade 1. Figure 14 displays the frequency of PAR scores for students at or near this grade-level standard.

- Students scoring a book level of 13-14 (just below grade level) had a mean score of 104.6 (above the 60th percentile).
- Students scoring on grade level based on book level (15-16) had a mean score of 109.6 (above the 70th percentile).
- Students scoring a book level of 17-18 (just above grade level) had a mean score of 117.4 (above 80th percentile).

Figure 14
Standardized PAR Scores by Book Levels
May 2005



Data Source: PAR data provided by Dr. Wood and WCPSS 2004-05 K-5 Assessment data

Question 5: To what extent did PAR and ALP K-2 identify the same students as needing extra support?

The vast majority of students identified as in need of assistance by the ALP K-2 program were also identified as below average on the PAR, with most identified as quite low. However, fewer than half of those identified as quite low on the PAR were served in ALP K-2.

Both literacy programs focus on identifying students in need of additional assistance and providing those students the additional support they require. The PAR program assessed all kindergarten students at the schools participating in the PAR study in February 2004 regardless of need. Student scores on the PAR assessment were then used to produce 3rd-grade end-of-

grade (EOG) prediction scores. The predicted score was standardized against national norms and scaled similar to the PAR assessment scores, with 100 equaling the average. This standardized score was used to identify students at risk of failure. Of the 827 students who were part of the full PAR study (February 2004 to May 2005), 316 were identified as at risk based on a risk score less than 99 (below the average). Of the 316 students identified as at risk, 156 had a PAR risk score less than 90 (below the 30th percentile).

Since ALP K-2 focuses on students at risk, all ALP K-2 participants are considered at risk of academic failure based on their selection into the program. The criteria for determining a student's risk include below grade-level scores on print concepts and book level (based on locally set K-2 assessment guidelines), but also include other multiple selection criteria including: teacher observations, prior service in ALP K-2, retention status, service in special education and ESL programs, and additional test results collected during screening.

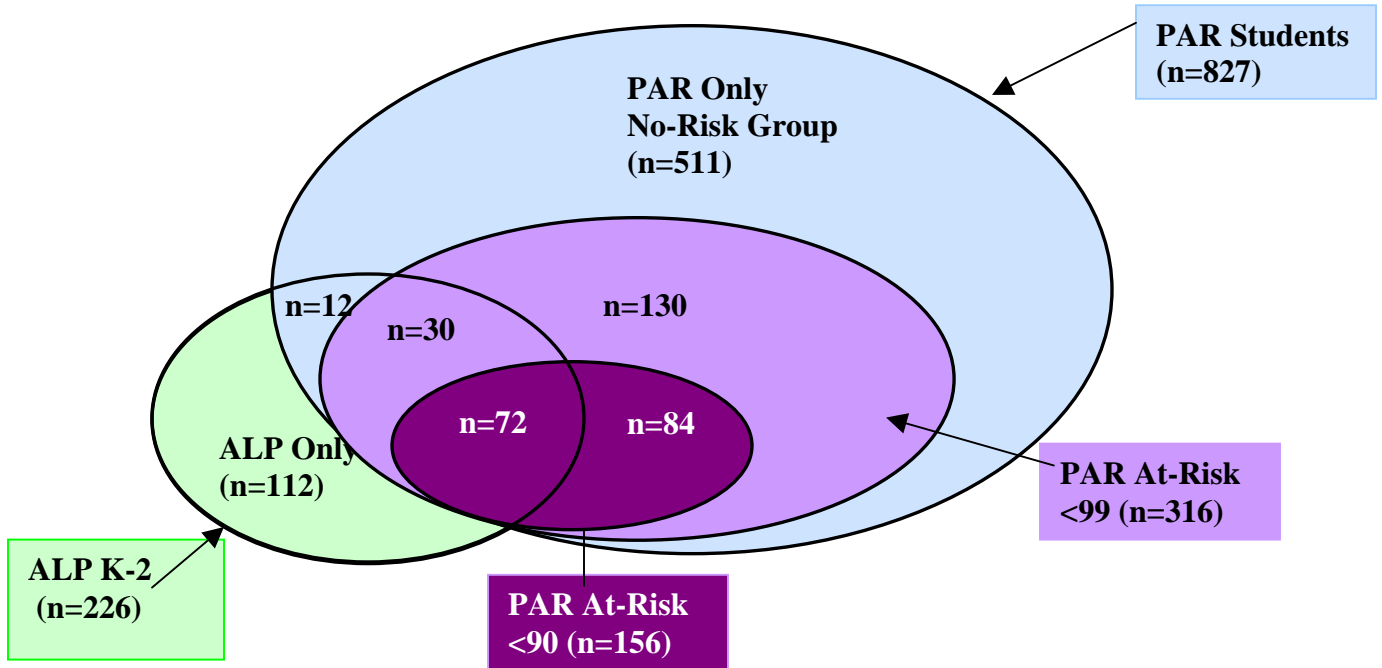
Figure 15 displays the overlap of students in PAR and ALP K-2 within the 13 PAR schools participating in 2004-05. It also depicts the students who were identified as at risk based on the two risk thresholds set for PAR using their predicted 3rd-grade EOG score. Among the 827 PAR participants:

- 316 students were considered at risk based on a score of less than 99 on their predicted 3rd-grade EOG score.
 - 156 of these students scored less than 90 on their predicted 3rd-grade EOG (only 46%, 72 of 156, were served in ALP K-2).
 - 160 students had at-risk scores between 90 and 99 (only 19%, 30 of 160, were served in ALP K-2).
- 511 students were not identified as at risk based on the PAR prediction score.
 - The ALP K-2 program served 12 of these students.

Almost all ALP K-2 students also scored below average on the PAR assessment; with most students scoring a PAR score less than 90. Thus, among the 226 ALP K-2 participants:

- 112 students participated in only ALP (students not enrolled in kindergarten in February 2004 at a PAR school were not included in the PAR study).
- 114 students participated in both PAR and ALP K-2.
 - 102 at risk based on predicted score <99 (72 were < 90).
 - 12 were not identified as at risk by PAR.

Figure 15
Program Overlap of PAR participants in 2004 and 2005
and ALP K-2 Students in 2004-05
at PAR Schools



Data Source: PAR data provided by Dr. Wood and ALP K-2 2004-05 data

DISCUSSION

Student results on both the PAR assessment (experimental and control groups) and book level were considered in terms of their participation in ALP K-2 and/or PAR. Because school participation in the PAR study was voluntary, the overall PAR participants were in demographic groups with fewer risk factors, while ALP K-2 students were more likely to fall into demographic groups with greater risk factors. Overall, students in the experimental PAR group showed similar academic growth on the PAR assessment to those in the control group. However, among students participating in the ALP K-2 program, the mean PAR score for the experimental PAR group was significantly higher than for the control group. Thus, for students identified by the ALP K-2 program as in need of additional assistance, their achievement appeared to be enhanced by the extra teacher training and support provided to the experimental group as part of the PAR study. However, ALP K-2 students who participated in PAR had similar book-level gains to students receiving ALP K-2 only.

Because of concerns with the book-level portion of the K-5 assessment instrument, this report utilizing the nationally normed PAR assessment examined student scores on book level and the identification of at-risk students by the ALP K-2 program. By using a nationally standardized instrument to compare student reading scores, we were able to examine the correlation between book level (WCPSS' grade-level standard) and PAR assessment score to determine whether

book level and PAR scores were positively correlated. In other words, the comparison was to determine whether a high score on book level is related to a high score on the PAR assessment.

There was a significant positive relationship between students' performance on the PAR assessment and book level. Nearly all of the students (95% or greater) who scored above grade level on their book level in May 2004 and May 2005 also scored above the national average (≥ 100) on the PAR assessment. The match between students below grade level based on book level and below the national average (100) on PAR score was not as closely aligned. In instances where the PAR and book level did not match, there was a greater likelihood that using book level as the grade-level criteria over-identified students as below grade level when compared to the PAR score. This could indicate that book level is a more stringent test of students' reading abilities than the PAR assessment or that reading level is not as accurate a predictor of students' reading ability.

The PAR assessment was also used to examine the selection of at-risk students for ALP K-2. The PAR assessment identified students at risk of failure based on their predicted 3rd-grade EOG score. Of the 114 students who were served by both PAR and ALP K-2, most (89%) were identified as at risk based on the more broadly defined risk threshold of < 99 on their PAR predicted 3rd-grade EOG. Under the narrowed definition of at risk (< 90 PAR predicted EOG score), fewer ALP K-2 students met the PAR defined definition of at risk. While PAR and ALP K-2 used very different selection criteria for determining if a student is at risk, there was a large overlap in the students identified as needing additional assistance based on both sets of criteria. Given that PAR is a nationally normed instrument, we would expect that students with the greatest need would meet the PAR study's most stringent definition of risk (< 90 PAR predicted EOG). Thus, it would have been expected for the ALP K-2 program to have a greater overlap with this group of at-risk students.

Therefore, students identified as at risk based on book level are also identified as needing extra support by the PAR assessment. However, PAR would identify additional K-1 students with high needs that are currently not addressed. Results therefore suggest that PAR might be a helpful screen at these early critical grades.

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ATTACHMENT
School Participating in the PAR Study
PAR/ALP K2 Students by School

School Name	PAR only	ALP and PAR	Total
Baileywick Elementary	67	15	82
Brentwood Elementary	28	20	48
Bugg Elementary	33	9	42
Davis Drive Elementary	106	0	106
Durant Road Elementary	52	6	58
Green Hope Elementary	52	4	56
Hodge Road Elementary	30	18	48
North Woods Elementary	55	6	61
Olds Elementary	16	1	17
Partnership Elementary	35	3	38
Salem Elementary	76	13	89
Weatherstone Elementary	59	6	65
Willow Springs Elementary	104	13	117
Total	713	114	827

Note: Bold indicates Experimental Group