

**Analysis of Individual Child Assessment for a Sample of Children
Who Are Receiving Child Development Education Pilot Program (CDEPP) Services
Spring 2007 and Fall 2007**

**Fred Greer, PhD
Heather Smith Googe, MEd
William H. Brown, PhD
University of South Carolina**

The South Carolina General Assembly requested that the Education Oversight Committee (EOC) conduct an evaluation of the Child Development Education Pilot Program (CDEPP). The South Carolina Legislature also requested child outcome measures related to the new publicly funded preschool initiative. Analyses of child screening and child assessment were planned, collected, and analyzed by an independent evaluation team from USC who worked collaboratively with research personnel in the EOC. Given the legislative mandate to evaluate the newly funded preschool programs and the need carefully to evaluate publicly funded educational programs, we have implemented a five-year project to systematically evaluate the implementation and participant results of CDEPP. After the initial year in pilot testing an individual child assessment protocol, we selected an assessment protocol and will annually assess a cohort of 150 preschoolers from public school and private center CDEPP classrooms in the fall of their preschool and kindergarten year of education.

**Assessment Instruments Employed for Individually and Developmentally
Appropriate Assessment of Preschoolers**

During the spring 2007 pilot test of child assessments, we examined the following five assessments for preschool children: *Peabody Picture Vocabulary Test 4th Edition (PPVT 4)* (Dunn & Dunn, 2005); *Expressive Vocabulary Test 2 (EVT 2)* (Williams, 2005); *Woodcock-Johnson III Preschool Battery (WJ-III)* (Woodcock, McGrew, & Mather, 2001); *Behavior Assessment System for Children, Second Edition (BASC-2)* (Reynolds & Kamphaus, 2004); and *Get It, Got It, Go!* (Emergent Literacy Assessment, University of Minnesota). Following the spring pilot testing, based on our experiences and analyses of individual child administration time and data yielded from the five assessments, we chose three primary assessment tools. The final assessment protocol for the evaluation of CDEPP will include two individually administered assessments of children's developmental and educational status (i.e., *PPVT 4*, *WJ-III*) and one teacher report behavioral scale of children's social competence (*BASC-2*) (i.e., social skills and problem behaviors).

The *Peabody Picture Vocabulary Test 4th Edition (PPVT 4)* is an un-timed, individually administered, norm-referenced measure designed to assess receptive vocabulary and word comprehension for persons aged 2 years 6 months through 90 years. Since development of the original edition in the 1950s, the *PPVT* has become one of the more commonly used individual language development tests in the United States. The *PPVT 4* is the most current edition (released in 2006), and its are appropriate for use in screening for language development problems, understanding linguistic potential, reading difficulties, monitoring growth, and longitudinal research. The *PPVT 4* has been employed widely in evaluation studies of preschool children and yields an overall standard score with a mean of 100 and a standard deviation of 15.

The *Woodcock-Johnson III Tests of Achievement (WJ-III)* is an un-timed, individually administered, norm-referenced measure designed to assess oral language and achievement for persons aged 2 years through 90 years. The *WJ-III* results may be used in screening for diagnosis of learning disorders, assessing educational growth, program evaluation, educational programming, and longitudinal research. For preschool-aged children, the standard battery of the *WJ-III* is comprised of six subtests. Each subtest yields its own standard score with a mean of 100 and a standard deviation of 15. The results of these subtests can be combined to produce three composite achievement scores. The *WJ-III* has been used widely in evaluation studies of preschool children. Subtests and composite scores are described in the *Essentials of WJ III® Tests of Achievement Assessment* (Mather, Wendling, & Woodcock, 2001) and include:

- *Letter-Word Identification* requires identifying and pronouncing isolated letters and words.
- *Story Recall* requires listening to passages of gradually increasing length and complexity and then recalling the story elements.
- *Understanding Directions* pointing to various objects in a picture after listening to instructions that increase in linguistic complexity.
- *Spelling* initially measures prewriting skills such as drawing lines and tracing letters. Subsequent sets of items require the writing of letters and spelling of words that are presented orally.
- *Passage Comprehension* initially involves symbolic learning; following items require the one to point to the picture described by a written phrase.
- *Applied Problems* requires the person to analyze and solve math problems.
- *WJ Oral Language* is a composite of the *Story Recall* and *Understanding Directions* subtests and is designed as a broad measure of oral language.
- *WJ Achievement* is a composite of *Letter-Word Identification*, *Spelling*, *Passage Comprehension*, and *Applied Problems*. This scale is designed as a broad measure of achievement.
- *WJ Reading* is a composite of *Letter-Word Identification* and *Passage Comprehension* and is designed as a broad measure of reading achievement.

In addition to the *PPVT 4* and *WJ-III* individually administered tests, the *Behavior Assessment System for Children-Second Edition (BASC-2)* was used to assess students' social competence in the spring and fall of 2007. Teacher rating scale protocols were provided to students' lead teachers to gather information on the children's behaviors that might affect school functioning. The 100-item teacher report questionnaire yields T-scores with a mean of 50 and a standard deviation of 10. The *BASC-2* has been employed widely in the assessment of preschool children's social competence. Scores for the subscales of the *BASC-2* include:

- *Behavioral Symptoms Index*: a composite of the *BASC-2* internalizing and externalizing behavior problems scales that measures overall behavior and general functioning.
- *Adaptability*: a measure the ability to adjust to changes in routine, shifting between activities, adapting to interactions with others.
- *Functional Communication*: an assessment of expressive and receptive communication skills.
- *Social Skills*: a measurement of social skills functioning and social behaviors.

Spring 2007 Pilot Testing of 48 Children Funded by CDEPP

During the spring of 2007, members of the evaluation team administered individual assessments to 48 preschoolers who participated in CDEPP. The purpose of the spring assessments was to pilot test an individually and developmentally appropriate assessment protocol for preschool-age children who receive CDEPP services. Fifty percent (50%) of the children were students from public school classrooms and the other 50% were children enrolled in private center classrooms. Public school districts participating in CDEPP were divided into two groups based on the number of children served in CDEPP classrooms (i.e., large vs. small numbers of students funded through CDEPP). Three districts from the large and small strata were randomly selected and from each these six districts, one school site was randomly chosen. At each of these six schools, four students (two males and two females) were randomly selected from among all preschoolers funded through CDEPP. Preschoolers served by personnel in private centers were also selected randomly. However, because four students were needed for testing from each site, only private centers with six or more preschoolers funded by CDEPP were included in the selection process. Similar to the public school selection of students, once six programs were selected, four students (two male and two female) were randomly drawn from each center's roster whenever possible.

Spring 2007 Pilot Test Sample for Both Public School and Private Center CDEPP

Gender	Number	Percent¹
Female	23	48%
Male	25	52%
Total	48	100%
Ethnicity	Number	Percent
African-American	40	83%
White	8	17%
Total	48	100%

¹All percentages are rounded in all tables in this report and may not always total 100%.

Spring 2007 Pilot Test Sample for Public School CDEPP

Gender	Number	Percent
Female	12	50%
Male	12	50%
Total	24	100%
Ethnicity	Number	Percent
African-American	22	92%
White	2	8%
Total	24	100%

Spring 2007 Pilot Test Sample for Private Center CDEPP

Gender	Number	Percent
Female	13	54%
Male	11	46%
Total	24	100%

Ethnicity	Number	Percent
African-American	18	75%
White	6	25%
Total	24	100%

**Spring 2007 Child Assessment Findings for Both Public School and Private Center
CDEPP Preschoolers**

Child Assessments	N	Mean	Median	Std. Deviation	Range
<i>PPVT 4¹</i>	48	89.2	88.0	10.4	69 - 111
<i>WJ-III Subscales¹</i>	N				
<i>WJ Oral Language</i>	48	93.0	92.0	12.8	67 - 115
<i>WJ Achievement</i>	48	97.4	100.0	10.8	73 - 117
<i>WJ Reading</i>	48	95.5	96.0	11.0	71 - 120
<i>Letter-Word ID</i>	48	99.5	101.5	10.4	71 - 116
<i>Story Recall</i>	48	95.7	98.0	17.3	56 - 125
<i>Directions</i>	48	91.4	90.5	12.8	65 - 118
<i>Spelling</i>	48	99.7	98.0	11.3	76 - 123
<i>Comprehension</i>	48	94.8	94.0	8.6	73 - 115
<i>Applied Problems</i>	48	96.0	96.0	9.3	71 - 124
<i>BASC-2 Subscales²</i>	N	Mean	Median	Std. Deviation	Range
<i>Behavioral Symptoms Index</i>	41	51.5	49.0	10.9	37 - 82
<i>Adaptability</i>	41	51.1	51.0	9.8	27 - 69
<i>Social Skills</i>	41	53.8	50.0	10.9	38 - 75
<i>Functional Communication</i>	41	53.2	53.0	8.5	36 - 70

¹Standard Scores have a mean = 100 and standard deviation = 15.

²T-scores have a mean = 50 and standard deviation = 10.

Spring 2007 Child Assessment Findings for Public School CDEPP Preschoolers

Child Assessments	N	Mean	Median	Std. Deviation	Range
<i>PPVT 4</i>	24	89.8	87.5	10.9	69 - 111
WJ-III Subscales	N				
<i>WJ Oral Language</i>	24	93.2	94.5	11.0	68 - 112
<i>WJ Achievement</i>	24	95.1	94.5	11.1	73 - 117
<i>WJ Reading</i>	24	93.0	91.0	11.6	71 - 113
<i>Letter-Word ID</i>	24	97.0	100.5	11.5	71 - 115
<i>Story Recall</i>	24	97.6	99.5	15.5	57 - 119
<i>Directions</i>	24	90.1	91.5	13.8	65 - 117
<i>Spelling</i>	24	97.1	96.5	10.9	78 - 123
<i>Comprehension</i>	24	94.0	93.0	8.1	73 - 107
<i>Applied Problems</i>	24	95.4	95.5	7.2	84 - 110
BASC-2 Subscales	N	Mean	Median	Std. Deviation	Range
<i>Behavioral Symptoms Index</i>	19	51.1	48.0	10.9	37 - 82
<i>Adaptability</i>	19	48.1	48.0	8.6	27 - 65
<i>Social Skills</i>	19	51.1	48.0	10.0	38 - 68
<i>Functional Communication</i>	19	49.3	49.0	8.1	36 - 65

Spring 2007 Child Assessment Findings for Private Center CDEPP Preschoolers

Child Assessments	N	Mean	Median	Std. Deviation	Range
<i>PPVT 4</i>	24	88.7	88.0	10.1	72 - 110
WJ-III Subscales	N				
<i>WJ Oral Language</i>	24	92.8	90.0	14.6	67 - 115
<i>WJ Achievement</i>	24	99.8	102.0	10.3	75 - 114
<i>WJ Reading</i>	24	98.0	99.5	10.0	80 - 120
<i>Letter-Word ID</i>	24	102.0	103.5	8.7	88 - 116
<i>Story Recall</i>	24	93.8	97.5	19.1	56 - 125
<i>Directions</i>	24	92.7	89.0	12.0	70 - 118
<i>Spelling</i>	24	102.3	102.5	11.4	76 - 120
<i>Comprehension</i>	24	95.5	94.5	9.2	76 - 115
<i>Applied Problems</i>	24	96.6	96.0	11.2	71 - 124
BASC-2 Subscales	N	Mean	Median	Std. Deviation	Range
<i>Behavioral Symptoms Index</i>	22	51.9	50.0	11.2	37 - 80
<i>Adaptability</i>	22	53.8	53.0	10.2	39 - 69
<i>Social Skills</i>	22	56.2	50.0	11.3	45 - 75
<i>Functional Communication</i>	22	56.5	58.0	7.4	44 - 70

Fall 2007 Individual and Developmentally Appropriate Child Assessment of 150 Children Funded by CDEPP

During the fall of 2007, we selected CDEPP students for assessment and the process was similar to the spring procedure. It should be noted that based on consultation with Gary Henry, PhD, who has evaluation expertise and experience in the Georgia Preschool Study, we selected three (3) children at each CDEPP site. One hundred-fifty students funded by CDEPP were selected from among 37 public schools and 13 private centers. The difference in proportion of students assessed for the fall of 2007 in public schools and private centers was based on the ratio of preschoolers funded by CDEPP in the two state-funded programs, the South Carolina Department of Education (SCDE) and the Office of First Steps to School Readiness (OFS). Three students were assessed at each site with the proportion of males and females alternated across sites to ensure a better gender balance for preschoolers assessed.

Fall 2007 Child Assessment Sample for Both Public School and Private Center CDEPP

Gender	Number	Percent
Female	74	49%
Male	76	51%
Total	150	100%
Ethnicity	Number	Percent
African-American	105	70%
White	33	22%
Unidentified	6	4%
Hispanic	5	3%
Asian	1	1%
Total	150	100%

Fall 2007 Child Assessment Sample for Public School CDEPP

Gender	Number	Percent
Male	57	51%
Female	54	49%
Total	111	100%
Ethnicity	Number	Percent
African-American	76	69%
White	26	23%
Unidentified	5	5%
Hispanic	3	3%
Asian	1	1%
Total	111	100%

Fall 2007 Child Assessment Sample for Private Center CDEPP

Gender	Number	Percent
Female	20	51%
Male	19	49%
Total	39	100%

Ethnicity	Number	Percent
African-American	29	74%
White	7	18%
Hispanic	2	5%
Unidentified	1	23%
Total	39	100%

The PPVT 4, WJ-III, and BASC-2 were used for assessing the 150 CDEPP-funded students during the fall of 2007. In general, the performance on the assessment measures by CDEPP participants in the sample upon school entry is below the national norm.

In regard to differences between students served in public and private settings, public school CDEPP participants in the fall 2007 sample had somewhat lower performance on the assessments than CDEPP participants sampled from private centers. No statistical significance was found for most of these score differences. However, independent t-tests of the assessment result means did show statistically significant differences between the groups for the *WJ Achievement* composite and its *Letter-Word Identification* subtest, with public school students scoring lower than private center students.

**Fall 2007 Child Assessment Findings for Both Public School and Private Center
CDEPP Preschoolers**

Child Assessments	N	Mean	Median	Std. Deviation	Range
<i>PPVT 4</i>	150	87.2	86.0	13.8	53 - 124
WJ-III Subscales					
<i>WJ Oral Language</i>	150	90.5	90.0	14.3	48 - 125
<i>WJ Achievement</i>	150	91.9	92.5	13.1	51 - 122
<i>WJ Reading</i>	150	91.9	92.5	13.2	54 - 132
<i>Letter-Word ID</i>	150	93.3	93.0	12.4	66 - 130
<i>Story Recall</i>	150	91.0	94.0	18.5	60 - 137
<i>Directions</i>	150	90.7	92.0	15.3	41 - 121
<i>Spelling</i>	150	93.9	93.5	12.6	60 - 122
<i>Comprehension</i>	150	96.9	96.0	9.5	72 - 115
<i>Applied Problems</i>	150	96.1	97.0	10.9	59 - 129
BASC-2 Subscales					
<i>Behavioral Symptoms Index</i>	115	49.8	47.0	9.9	36 - 74
<i>Adaptability</i>	115	48.3	46.0	9.9	27 - 69
<i>Social Skills</i>	115	47.6	45.0	9.9	30 - 75
<i>Functional Communication</i>	115	47.1	47.0	9.1	26 - 70

Fall 2007 Child Assessment Findings for Public School CDEPP Preschoolers

Child Assessments	N	Mean	Median	Std. Deviation	Range
<i>PPVT 4</i>	111	86.5	85.0	12.9	53 - 118
WJ-III Subscales					
<i>WJ Oral Language</i>	111	89.8	90.0	14.4	48 - 125
<i>WJ Achievement</i>	111	90.3	91.0	12.6	51 - 119
<i>WJ Reading</i>	111	90.5	91.0	12.9	54 - 117
<i>Letter-Word ID</i>	111	91.7	91.0	11.9	67 - 117
<i>Story Recall</i>	111	90.4	94.0	18.2	60 - 129
<i>Directions</i>	111	90.0	92.0	16.6	41 - 118
<i>Spelling</i>	111	92.7	91.0	11.9	61 - 122
<i>Comprehension</i>	111	96.7	96.0	9.4	72 - 111
<i>Applied Problems</i>	111	95.2	96.0	10.7	59 - 129
BASC-2 Subscales					
<i>Behavioral Symptoms Index</i>	82	49.4	47.0	9.8	36 - 73
<i>Adaptability</i>	82	47.9	46.0	10.1	27 - 69
<i>Social Skills</i>	82	46.5	45.0	10.6	30 - 75
<i>Functional Communication</i>	82	45.8	45.0	9.3	26 - 70

Fall 2007 Child Assessment Findings for Private Center CDEPP Preschoolers

Child Assessments	N	Mean	Median	Std. Deviation	Range
<i>PPVT 4</i>	39	89.3	88.0	15.9	66 - 124
WJ-III Subscales					
<i>WJ Oral Language</i>	39	92.3	91.0	14.3	71 - 123
<i>WJ Achievement</i>	39	96.2	97.0	13.8	61 - 122
<i>WJ Reading</i>	39	96.0	97.0	13.3	65 - 132
<i>Letter-Word ID</i>	39	97.8	96.0	12.9	66 - 130
<i>Story Recall</i>	39	92.6	94.0	19.5	60 - 137
<i>Directions</i>	39	92.6	91.0	12.5	64 - 121
<i>Spelling</i>	39	97.3	98.0	14.0	60 - 122
<i>Comprehension</i>	39	97.4	96.0	9.9	74 - 115
<i>Applied Problems</i>	39	98.6	99.0	11.3	65 - 119
BASC-2 Subscales					
<i>Behavioral Symptoms Index</i>	33	50.9	50.0	10.2	38 - 74
<i>Adaptability</i>	33	49.2	51.0	9.5	34 - 69
<i>Social Skills</i>	33	50.2	53.0	7.5	35 - 65
<i>Functional Communication</i>	33	50.2	49.0	8.1	36 - 65

References

- Dunn, L. M., Dunn, D. M. (2007). Peabody picture vocabulary test (4th ed.).
Bloomington, MN: NCS Pearson, Inc.
- Mather, N., Wendling, B. J. & Woodcock, R. W. (2001). Essentials of WJ III Tests of
Achievement assessment. Hoboken, NJ: Wiley Publishing.
- Reynolds, C. R., Kamphaus, R. W. (2004). Behavior assessment system for children
manual (2nd ed.). Circle Pines, MN: AGS Publishing.
- Reynolds, C. R., Kamphaus, R. W. (2004). Behavior assessment system for children
manual (2nd ed.). Circle Pines, MN: AGS Publishing.
- Williams, K. T. (2007). Expressive vocabulary test (2nd ed.). Circle Pines, MN: AGS
Publishing.
- Woodcock, R. W., McGrew, K. S., & Mather, N. (2001, 2007). Woodcock-Johnson III
tests of achievement. Rolling Meadows, IL: Riverside Publishing.