

**Quality Improvement for  
Early Care, Health and Education  
Programs: Benton County Kindergarten  
Readiness**

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National Resource  
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## **Introduction**

The 2006 Iowa General Assembly included statutory requirements for the use of School Ready funds for efforts to improve the quality of early care, health and education programs. **HF 2769** *allocated “funds for efforts to improve the quality of early care, health and education programs. The Iowa Empowerment Board distributed funds to community empowerment areas for local quality improvement efforts through a methodology identified by the board to make the most productive use of the funding.”*

Benton County Empowerment (BCE) has supported preschool programs throughout Benton County. To better understand the relationship between preschool programming and kindergarten readiness, BCE undertook an effort with the funds provided to gather information on early childhood literacy skills and social emotional development in Benton County, Iowa. By measuring early literacy skills, social emotional development, Kindergarten test scores and the relationship between these measures, BCE intended to identify strengths of and barriers to kindergarten readiness. BCE collected information and assistance in analyzing the data was provided by the University of Iowa, School of Social Work, National Resource Center for Family Centered Practice.

## **Literature Review**

### **Early Literacy Skills and Development**

Early childhood development is critical because the brain develops most rapidly in the first years of life, and children who succeed in kindergarten, first grade, and second grade are more likely to be successful in later grades (Knitzer & Lefkowitz, 2005). Some have suggested that caregivers seek early childhood assessment to determine if children are ready for kindergarten and to what extent some children may be in need of additional assistance in order to be ready for kindergarten. Assessment may facilitate early childhood learning and development by better informing teachers and caregivers (Kochanoff, Hirsch-Pasek, Newcombe, & Weinraub, 2003). At an aggregate level, assessments can also serve as performance measures for programs and school accountability (Kochanoff, et al., 2003).

Research by Campbell and Ramey (1994) called the Carolina Abecedarian Project found long-term benefits of effective early childhood education on academic achievement among children in families living in poverty. Their study assigned children to one of four conditions: educational treatment from infancy through age eight; preschool treatment only (infancy to age five); primary school treatment only (age five to eight); or a control group with no treatment. Follow-ups were conducted at four and seven years and showed that children with preschool experience maintained an IQ advantage over children without early treatment through age 12 (Campbell & Ramey, 1994). School-age treatment alone was less effective than receiving educational treatment from infancy through age eight. Thus, high quality preschool caregiving facilities were indicated to be extremely important (Campbell & Ramey, 1994) for early childhood learning and development.

A variety of tools to assess early childhood literacy skills are available. The Get Ready to Read screening tool was developed as part of the national campaign to provide information to parents and caregivers about the skills and knowledge PreK children need to be successful for learning to read in Kindergarten (NCCIC, 2004). The tool focuses on three areas: print knowledge, emergent writing and linguistic

awareness (NCCIC, 2004). Twenty questions are administered over 10-15 minutes; responses are then entered in a computer-based screening tool (Pearson Education, Inc., 2001; cf. <http://getreadytoread.org>).

The Yopp-Singer Test of Phoneme<sup>1</sup> Segmentation is a 22-item measure of phonemic awareness and ability of kindergarteners. It can also be used with first grade students and older children (Yopp, 1995). To assess the student's segmentation skills, the student is provided with a word and is asked to articulate each part of the word in order. The test takes approximately 5 to 10 minutes per individual to administer (Bridgewater State, 2003).

The "Get It Got It Go" online program incorporates Individual Growth and Development Indicators (IGDI) to monitor a child's growth over time toward developmental outcomes (University of Minnesota, 2006). The Get it component of the program provides background and technical information about assessments, the assessments themselves, and administration instructions (Univ. of Minnesota, 2006). The assessment tool includes three sections that test Picture Naming, Alliteration, and Rhyming which measure a child's expressive language and early literacy skills (Univ. of Minnesota, 2006). The "Got it" portion of the program allows teachers to enter assessment data, generate graphical reports to monitor the developmental growth of young children and determine if intervention is necessary. Finally, the "Go" component provides suggestions to teachers of how to communicate and collaborate with parents about a child's progress and provides resources and suggestions for ways to improve a child's outcomes. The IGDI monitor a child's performance in language, social, cognitive, motor, and adaptive developmental domains (NCCIC, 2004). The Preschool IGDI are applicable to children ages 30 months to six years. The Early Elementary IGDI are intended for use with children ages five to eight years (for additional material see <http://ggg.umn.edu>).

PALS-PreK is designed for administration in fall of the preschool year and again in spring to evaluate progress. This literacy and phonological awareness screening tool measures preschooler knowledge of literacy fundamentals (Univ. of Virginia, 2006). The assessment is administered in 10-15 minutes (FCRR, n.d.) and measures skills that are predictive of future reading success including name writing ability, upper and lower-case alphabet recognition, letter sound and beginning sound production, print and word awareness, rhyme awareness and nursery rhyme awareness.

The Phonological Awareness Test (PAT) was designed to assess a child's phonological processing and phoneme-grapheme correspondence skills (LinguiSystems, n.d.). The PAT assesses second semester Kindergarten through second grade ability on five phonemic awareness tasks: segmentation, isolation,

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<sup>1</sup> 1. According to Wikipedia "a **phoneme** is the smallest posited structural unit that distinguishes meaning. Phonemes are not the physical [segments](#) themselves, but, in theoretical terms, cognitive [abstractions](#) or categorizations of them. An example of a phoneme is the /t/ sound in the words *tip*, *stand*, *water*, and *cat*. (In transcription, phonemes are placed between slashes, as here.) These instances of /t/ are considered to fall under the same sound category despite the fact that in each word they are pronounced somewhat differently. The difference may not even be audible to native speakers. That is, a phoneme may encompass several recognizably different *speech sounds*, called [phones](#). In our example, the /t/ in *tip* is [aspirated](#), [t<sup>h</sup>], while the /t/ in *stand* is not." (searched at <http://en.wikipedia.org/wiki/Phoneme> July 6, 2008).

deletion, substitution and blending (Bridgewater State, 2003). The test measures also measures rhyme, knowledge of graphemes and decoding skills. An additional spelling test may also be administered; however, the test takes approximately 40 minutes to administer and should be given by a professional trained in phonological awareness, such as a speech or language pathologist, a special educator, or a certified reading specialist (Bridgewater State, 2003).

The Dynamic Indicators of Basic Early Literacy Skills (DIBELS) measures early literacy development. Specifically, the DIBELS assesses Phonological Awareness, Alphabetic Principle, and Fluency with Connected Text (Univ. of Oregon, n.d.). The test is composed of six one-minute fluency measures that are used to monitor the development of pre-reading and early reading skills (Univ. of Oregon, n.d.). These fluency measures include Initial Sound Fluency, Letter Naming Fluency, Phoneme Segmentation Fluency, Nonsense Word Fluency, Retell Fluency, and Oral Reading Fluency. According to expected age appropriate skill levels, two or more of these fluency measures are administered to Kindergarten through third grade students. It takes approximately one to five minutes to administer (FCRR, n.d.). Additional information and resources are available at <http://dibels.uoregon.edu/>.

### **Social and Emotional Development**

In addition to assessing early literacy skills and development, it is also important to evaluate the social and emotional development of a child. Social and emotional learning plays a critical role in improving children's academic performance; emotions can influence student learning and their ultimate academic success (Zins, Bloodworth, Weissberg & Walbert, 2004; Richardson, B., Graf, N., Clegg, R., & Knutsen, J., 2006; Richardson, B., Graf, N., & Loring, B, 2006; Richardson & Graf; 2006). The social, emotional and cognitive learning of young children are highly interconnected (Knitzer & Lefkowitz, 2005). Reading ability has been shown to improve when strategies to help children build social and emotional skills have been incorporated into the classroom (Knitzer & Lefkowitz, 2005). Academic achievement increases, problem behaviors decrease, and children's relationships improve when quality social-emotional learning programs are incorporated into schools (Elias, 2003; Richardson, B., Graf, N., Clegg, R., & Knutsen, J., 2006). Social-emotional learning is an important link with academic knowledge that helps children succeed in school, at home, in the community, and at work.

Two assessment tools available to evaluate social and emotional development are the PKBS-2 and the DECA. The Preschool and Kindergarten Behavior Scales (PKBS-2) can be used to assess ages three through six (PRO-ED Inc., 2006). The instrument can be completed by parents, teachers, or other caregivers and takes approximately 12 minutes (PRO-ED Inc., 2006). The instrument comprises 76 items on two separate scales. The Social Skills scale is 34 items divided into three subscales: Social Cooperation, Social Interaction, and Social Independence. The Problem Behavior scale is 42 items and two subscales: Externalizing Problems and Internalizing Problems. Five optional problem behavior subscales can also be administered.

The Devereux Early Childhood Assessment (DECA) is a behavior rating scale for children aged two to five (DECI, n.d.). The DECA measures 27 positive behaviors related to three protective factors: attachment, self-control, and initiative. The Initiative subscale measures a child's ability to use independent thoughts and actions to meet his or her needs (DECI, n.d.). The Self Control subscale measures a child's ability to experience a range of feelings and express them in an appropriate manner

(DECI, n.d.). The Attachment subscale measures mutual, strong, and long-lasting relationships of a child and significant adult(s). DECA also includes a 10-item Behavioral Concerns Screener to measure challenging behaviors in preschool children. The tool is the first component of the DECA strengths-based program, which is composed of a total of five steps (see <http://www.devereuxearlychildhood.org/> ).

## Data and Measures

The DIBELS tests administered for this project included Initial Sound Fluency and Letter Naming Fluency.

- Initial Sound Fluency is a standardized, individually administered measure of phonological awareness that assesses a child's ability to recognize and produce the initial sound in an orally presented word. The test administrator measures the amount of time it takes the student to identify and produce the correct sound (onset). The score is the number of onsets correct in a minute. The authors provide the following description on the DIBELS website at <https://dibels.uoregon.edu/resources.php>:

The DIBELS Initial Sound Fluency (ISF) Measure is a standardized, individually administered measure of phonological awareness that assesses a child's ability to recognize and produce the initial sound in an orally presented word (Kaminski & Good, 1996, 1998; Laimon, 1994). The ISF measure is a revision of the measure formerly called Onset Recognition Fluency (OnRF). The examiner presents four pictures to the child, names each picture, and then asks the child to identify (i.e., point to or say) the picture that begins with the sound produced orally by the examiner. For example, the examiner says, "This is sink, cat, gloves, and hat. Which picture begins with /s/?" and the student points to the correct picture. The child is also asked to orally produce the beginning sound for an orally presented word that matches one of the given pictures. The examiner calculates the amount of time taken to identify/produce the correct sound and converts the score into the number of initial sounds correct in a minute. The ISF measure takes about 3 minutes to administer and score and has over 20 alternate forms to monitor progress.

The DIBELS website contains the following link as an example of the administration of the instrument:



[Video Clip of ISF administration](#)

or visit:

<https://dibels.uoregon.edu/measures/isf.php#description>

- Letter Naming Fluency is a standardized, individually administered test that provides a measure of risk. Students are presented with a page of upper- and lower- case letters arranged in random order and are asked to name as many letters as they can. The score is the number of letters named within one minute. The authors provide the following description on the DIBELS website at <https://dibels.uoregon.edu/resources.php>:

DIBELS Letter Naming Fluency (LNF) is a standardized, individually administered test that provides a measure of risk. LNF is based on research by [Marston and Magnusson \(1988\)](#). Students are presented with a page of upper- and lower-case letters arranged in a random order and are asked to name as many letters as they can. Students are told if they do not know a letter they will be told the letter. The student is allowed 1 minute to produce as many letter names as he/she can, and the score is the number of letters named correctly in 1 minute. Students are considered at risk for difficulty achieving early literacy benchmark goals if they perform in the lowest 20% of students in their district. The 20th percentile is calculated using local district norms. Students are considered at some risk if they perform between the 20th and 40th percentile using local norms. Students are considered at low risk if they perform above the 40th percentile using local norms.



[Video Clip of LNF administration](#)

or visit: <https://dibels.uoregon.edu/measures/isf.php#description> .

A copy of the DIBELS instrument used can be found in the Appendix.

The Devereux Early Childhood Assessment (DECA) is intended for use by teachers who are familiar with their students prior to administering the DECA to assess social-emotional development. Measures include:

- Initiative: a measure of the child's ability to use independent thought and action to meet his or her needs using a scale of 11 items;
- Self Control: a measure of the child's ability to experience a range of feelings and express them using the words and actions that society considers appropriate using an 8 item scale;
- Attachment: a measure of mutual, strong, and long-lasting relationships between a child and significant adult(s) using an 8-item scale.

The DECA also includes a 10-item "behavioral concerns" screener which measures a variety of challenging behaviors seen in preschool children. The DECA instrument is reproduced in the Appendix.

On a response scale of zero (never) to four (very frequently), teachers rate the behavior of each child on 37 items of the DECA instrument. Scale scores are computed by adding all the response scores in each protective factor scale, producing a raw score for each of the protective factors along with a behavioral concerns raw score.

The Phonological Awareness Test (PAT) is comprised of:

- Rhyming discrimination tasks which measure ability to identify rhyming words presented in pairs;
- Rhyming production tasks which assess ability to provide a rhyming word given a stimulus word;
- Deletion tasks for compounds and syllables measure ability to say a word and then say it again, deleting one root word or syllable.
- Deletion tasks for phonemes measures ability to say a word and then say it again deleting one of the word's phonemes or sounds.
- Blending tasks for phonemes measure the ability to blend phonemes<sup>1</sup> together to form a word when the phonemes are presented individually.

Raw scores for each of the DECA measures range from one to ten and have corresponding percentile ranks and standard scores. Rhyming discrimination raw scores and production raw scores are added together to produce a rhyming total raw score. Similarly, deletion for compounds and syllable raw scores are added to deletion for phonemes raw scores to produce a deletion total raw score. Preschools administered the DIBELS and DECA during fall and again in spring.

A caregiver survey was also distributed in the summer following the preschool year for completion by parents and caregivers of preschool children. The parent survey is also reproduced in the Appendix.

Each school district in Iowa must collect and report kindergarten assessment scores to the Iowa Department of Education annually. Accepted instruments include: DIBELS, PAT, Basic Reading Inventory, Early Literacy Assessments 8<sup>th</sup> edition or above, Observation Survey, Texas Primary Reading Inventory, and the Yopp-Singer Test of Phoneme Segmentation. School districts in Benton County use the Phonological Awareness Test (PAT) and those scores were obtained for kindergarten students in the fall semester following the preschool year.

## Results

### Baseline Results

Baseline information was obtained from 257 of 306 students attending preschools during one year in Benton County (84%). Table 1, presents the breakdown of students by preschool:

**Table 1: Number of Students by Preschool**

<i>Preschool</i>	<i>n</i>
1	3
2	11
3	21
4	30
5	5
6	7
7	20
8	24
10	12
11	31
12	20
13	11
14	18
15	14
16	6
17	24
TOTAL	257

The age of the students ranged from four to six years old with an average age of 4.6 years (97 were 4, 158 were 5 and 2 were 6). Fifty-eight percent were girls (n=147) and 42 percent were boys (n=108). Five identified as other than White (1 African American, 2 more than one race, and 2 Latino).

Table 2 presents overall mean and median scores for Initial Sound Fluency (ISF) and Letter Naming Fluency (LNF) scales of the DIBELS and the four measures of the DECA: Initiative, Self Control, Attachment and Behavior Concerns.

**Table 2. Baseline DIBELS and DECA Means, Medians and Standard Deviations**

<i>Measure</i>	<i>n</i>	<i>Mean</i>	<i>Median</i>	<i>Std. Dev.</i>
Initial Sound Fluency	207	10.13	8.2	8.63
Letter Naming Fluency	192	20.83	14.5	22.89
Initiative	210	29.73	30.0	6.75
Self Control	210	22.89	23.0	5.68
Attachment	210	24.54	25.0	4.48
Behavior Concerns	210	6.45	6.0	5.24

Total Protective Factors	210	77.16	78.0	15.10
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Another useful way to interpret the DECA scores is to convert the raw scores to percentile scores; percentile scores are presented in Table 3. Percentile scores are useful because they provide some standardization in the form of the relative rank compared to other test takers. A test score at the 50<sup>th</sup> percentile, for example, is a score which is greater than 50% of those taking the test. The overall mean percentile scores are greater than 50 (greater than 50 percent of all test takers) for Initiative, Self Control and Attachment.

**Table 3. DECA Baseline Percentile Means, Medians and Standard Deviations**

<i>Measure</i>	<i>n</i>	<i>Mean ( <math>\bar{X}</math> )</i>	<i>Median (M)</i>	<i>Std. Dev.</i>
Initiative Percentile	210	60.06	62.00	27.30
Self Control Percentile	210	69.25	76.00	27.79
Attachment Percentile	210	55.60	58.00	27.85
Behavior Concerns Percentile	210	31.44	27.00	27.47

**Baseline Results by Preschool, Gender and Age**

Table 4, below, presents a breakdown by each preschool on gender and age. Fifty-seven percent (57%) of the students were female and 54 percent of students were five years old (two students were six years old and were excluded from the analysis). The number of individuals at each preschool ranges from 3 to 31, with an average (  $\bar{X}$  ) of 16. Females in preschools 2, 11, 13 and 16 were less than 50 percent of the total.

<b>Table 4: Age and Gender by Preschool</b>						
	<u>Four Year Old</u>		<u>Five Year Old</u>		<u>Group Total</u>	
<u>Preschool</u>	Pct Female	n	Pct. Female	n	Pct Female	N*
<u>1</u>	100%	1	50%	2	67%	3
<u>2</u>	75%	4	17%	6	40%	11
<u>3</u>	40%	5	86%	14	74%	21
<u>4</u>	76%	17	38%	13	60%	30
<u>5</u>	100%	2	50%	2	75%	5
<u>6</u>	100%	2	60%	5	71%	7
<u>7</u>	63%	8	82%	11	74%	20
<u>8</u>	73%	11	58%	12	65%	24
<u>10</u>	57%	7	80%	5	67%	12
<u>11</u>	62%	13	38%	16	48%	31
<u>12</u>	.					20
<u>13</u>	20%	5	67%	6	45%	11
<u>14</u>	.					18
<u>15</u>	36%	11	100%	3	50%	14
<u>16</u>	33%	3	50%	2	40%	6
<u>17</u>	75%	8	44%	16	54%	24
Group Total*	62%	97	57%	113	54%	257

Group Totals may not equal the sum from the Four and Five Year Old columns due to missing values on gender, age or school.

Table 5, below, presents the baseline DIBELS and DECA mean scores by gender. Significant differences by gender were found for each domain of the DECA; females scored higher than males on Initiative, Self Control and Attachment, and lower on Behavioral Concerns. No significant differences by gender were found for the DIBELS domains of Initial Sound Fluency or Letter Naming Fluency.

MEASURE	Gender		Group Total
	male	female	
Initial Sound Fluency	10.02 <sup>a</sup>	10.22	10.13
	84	123	207
Letter Naming Fluency	18.10	22.66	20.83
	77	115	192
Initiative **	28.05	30.89	29.73
	86	124	210
Self-control **	21.57	23.80	22.89
	86	124	210
Attachment **	23.59	25.20	24.54
	86	124	210
Behavioral concerns **	7.59	5.66	6.45
	86	124	210

\*\* Significant difference between groups  $p < .01$

<sup>a</sup> unless otherwise noted, scores in tables are mean scores with the number of cases used in the calculation of the mean (valid n) under the mean

DECA scores from Table 5 are converted to percentile scores and reported in Table 6, below. Using percentile scores, significant differences were found by gender. Consistent with the raw score results, girls scores were significantly higher than boys on initiative, self control and attachment, and significantly lower than boys on behavioral concerns. For all students, scores were above the 50<sup>th</sup> percentile on initiative, self control and attachment and below the 32<sup>nd</sup> percentile for behavioral concerns ( $\bar{X}$  girls behavioral concerns = 27.75; boys = 36.77).

**Table 6: Baseline DECA Percentile Means and N by Gender**

	Gender		Group Total
	male	female	
Initiative Percentile**	53.64	64.51	60.06
	86	124	210
Self-Control Percentile**	62.23	74.11	69.25
	86	124	210
Attachment Percentile*	50.27	59.30	55.60
	86	124	210
Behavior Concerns Percentile*	36.77	27.75	31.44
	86	124	210

\* Significant difference between groups  $p < .05$

\*\* Significant difference between groups  $p < .01$

Table 7 presents the mean scores for DIBELS and DECA at baseline by Age. No significant difference by age was found for any of the domains of either the DIBELS or DECA between those who were four years old and those who were five year old during the preschool year.

**Table 7: Baseline DIBELS and DECA Means and N by Age**

MEASURES	Age		Group Total
	Four Yr Olds	Five Yr Olds	
Initial Sound Fluency	8.75	11.31	10.13
	95	112	207
Letter Naming Fluency	19.97	21.57	20.83
	88	104	192
Initiative	29.39	30.01	29.73
	97	113	210
Self-control	23.60	22.27	22.89
	97	113	210
Attachment	24.77	24.34	24.54
	97	113	210
Behavioral Concerns	5.86	6.96	6.45
	97	113	210
Total Protective Factors	77.76	76.63	77.16
	97	113	210

DECA scores converted to percentile scores are presented in Table 8. Consistent with the results of the analysis of raw scores, no significant differences by age were found on percentile scores. However, both four and five year olds were well above the 50<sup>th</sup> percentile for initiative, self-control and attachment and were well below the 50<sup>th</sup> percentile for behavioral concerns.

**Table 8: Baseline DECA Percentile Means and N by Age**

	Age		Group Total
	Four Yr Olds	Five Yr Olds	
Initiative Percentile	59.03	60.94	60.06
	97	113	210
Self-Control Percentile	72.70	66.28	69.25
	97	113	210
Attachment Percentile	57.55	53.93	55.60
	97	113	210
Behavior Concerns Percentile	28.36	34.09	31.44
	97	113	210

**PreK Outcomes**

Information reported as outcomes is based on results from 210 preschool students. The demographic profile remains relatively unchanged compared to baseline with age ranging from four to five years old ( $\bar{X} = 4.54$ ). Females comprise 52 percent of the students, 98.5 percent were White and 98.9 percent were non-Hispanic. Table 9, below, presents the overall mean, median and standard deviations for the DIBELS and DECA outcome measures.

**Table 9. Outcome DIBELS and DECA Means, Medians and Standard Deviations**

<b><i>Outcome Evaluation Measure (OEM)</i></b>	<b><i>n</i></b>	<b><i>Mean</i></b>	<b><i>Median</i></b>	<b><i>Std. Dev.</i></b>
Initial Sound Fluency OEM	207	13.06	10.90	10.66
Letter Naming Fluency OEM	203	21.89	19.00	16.33
Initiative OEM	191	33.34	33.00	6.21
Self Control OEM	192	24.51	24.00	4.86
Attachment OEM	192	26.54	27.00	4.05
Behavior Concerns OEM	192	5.93	5.00	4.64
Total Protective Factors OEM	191	84.48	83.00	13.60

Table 10 presents the DECA outcome scores converted to percentile scores. The overall mean percentile score is greater than 60<sup>th</sup> percentile for attachment (the 60<sup>th</sup> percentile is the score at which 60 percent of all test takers would score below) and greater than the 70<sup>th</sup> percentile for Initiative and self-control. Behavior concerns mean scores rank at the 30<sup>th</sup> percentile ( $\bar{X} = 30.58$ ). The median score of 21 indicates that 50 percent of students score at or below the 21<sup>st</sup> percentile on behavioral concerns.

**Table 10. Outcome DECA Percentile Means, Medians and Standard Deviations**

<b><i>Outcome Evaluation Measure</i></b>	<b><i>n</i></b>	<b><i>Mean</i></b>	<b><i>Median</i></b>	<b><i>Std. Dev.</i></b>
Initiative Percentile OEM	191	73.56	79.00	22.44
Self Control Percentile OEM	185	78.25	82.00	21.70
Attachment Percentile OEM	192	67.02	73.00	26.24
Behavior Concerns Percentile OEM	192	28.93	21.00	26.42

Table 11 below presents mean outcomes for DIBELS and DECA by gender. Significant differences by gender were obtained on behavior concerns and borderline significant differences were found for self-control ( $p=.08$ ) and initial sound fluency ( $p=.06$ ) domains with females scoring higher for self-control and initial sound fluency and lower on behavior concerns.

**Table 11. Outcome DIBELS and DECA Means and N by Gender**

Outcome Evaluation Measure		Male	Female	Total
Initial Sound Fluency OEM *	Mean	14.68	12.04	13.12
		84	121	205
Letter naming fluency OEM	Mean	21.35	22.19	21.85
		82	119	201
Initiative OEM	Mean	32.77	33.66	33.31
		75	114	189
Self Control OEM*	Mean	23.74	25.02	24.51
		76	114	190
Attachment OEM	Mean	26.05	26.86	26.54
		76	114	190
Behavioral Concerns OEM**	Mean	7.36	5.05	5.97
		76	114	190
Total Protective Factors OEM	Mean	82.80	85.54	84.45
		75	114	189

\* Significant difference between groups  $p < .10$   
 \*\* Significant difference between groups  $p < .01$

Table 12, below, presents the DECA outcome scores converted to percentile scores. Significant differences by gender are reported for self-control and behavior concerns. Average (mean) scores among females was at the 80<sup>th</sup> percentile for self-control (80.84) and at the 24<sup>th</sup> percentile ( $\bar{X} = 23.83$ ) for behavior concerns. Average scores for boys on self-control was at the 74<sup>th</sup> percentile ( $\bar{X} = 74.03$ ) and for behavioral concerns boys scored at the 37<sup>th</sup> percentile ( $\bar{X} = 37.13$ ).

**Table 12: Outcome DECA Percentile Means and N by Gender**

Outcome Evaluation Measure		Male	Female	Total
Initiative OEM	Mean	71.27	74.82	73.41
		75	114	189
Self Control OEM*	Mean	74.03	80.84	78.21
		71	113	184
Attachment OEM	Mean	64.03	69.00	67.01
		76	114	190
Behavioral Concerns OEM**	Mean	37.13	23.83	29.15
		76	114	190

\* Significant difference between groups  $p < .10$   
 \*\* Significant difference between groups  $p < .01$

Table 13 presents the outcomes for DIBELS and DECA by age. Five year olds scored higher on initial sound fluency than four year olds ( $p < .10$ ). There were no other significant differences between age groups on either letter naming fluency or any of the domains of the DECA.

**Table 13: Outcome DIBELS and DECA Means and N by Age**

Outcome Evaluation Measure	Age		Group Total
	Four Yr Olds	Five Yr Olds	
Initial Sound Fluency OEM *	13.19	16.26	14.78
	80	86	166
Letter Naming Fluency OEM	19.72	21.79	20.79
	79	84	163
Initiative OEM	32.92	33.47	33.21
	80	89	169
Self Control OEM	24.80	24.08	24.42
	81	89	170
Attachment OEM	25.99	26.61	26.31
	81	89	170
Behavioral Concerns OEM	6.28	6.18	6.23
	81	89	170
Total Protective Factors OEM	83.95	84.16	84.06
	80	89	169

\* Significant difference between groups  $p < .10$

DECA outcome scores converted to percentile scores are presented in Table 14, below. As a group at follow-up, both four-and five-year-old preschool students scored at the 73<sup>rd</sup> percentile on initiative (Total  $\bar{X} = 72.76$ ), 78<sup>th</sup> percentile on self-control ( $\bar{X} = 77.54$ ), 65<sup>th</sup> percentile on attachment ( $\bar{X} = 65.40$ ), and at the 31<sup>st</sup> percentile on behavioral concerns ( $\bar{X} = 30.58$ ).

**Table 14: Outcome DECA Percentile Means and N by Age**

Outcome Evaluation Measure	Age		Group Total
	Four Yr Olds	Five Yr Olds	
Initiative Percentile OEM	71.00	74.35	72.76
	80	89	169
Self-Control Percentile OEM	79.09	76.13	77.54
	78	86	164
Attachment Percentile OEM	63.01	67.57	65.40
	81	89	170
Behavior Concerns Percentile OEM	30.47	30.69	30.58
	81	89	170

\* Significant difference between groups  $p < .05$

**Comparison of Baseline and Outcome Evaluation Measures of the DIBELS and DECA**

Table 15 presents comparisons between baseline and outcome measures for the DIBELS and DECA measures by gender. Overall, paired comparisons showed that scores increased for both males and females on initial sound fluency, initiative, attachment and total protective factors. Self-control increased significantly for boys. Changes in letter naming fluency and behavioral concerns were not significant.

**Table 15. Baseline and Outcome Mean Scores by Gender**

<b>MEASURE</b>	<b>Baseline(M)</b>	<b>Outcome(M)</b>	<b>Baseline(F)</b>	<b>Outcome(F)</b>
Initial Sound Fluency	9.00	14.68**	9.36	12.04**
Letter Naming Fluency	17.87	21.35	21.32	22.19
Initiative	27.30	32.77**	30.48	33.66**
Self Control	20.92	23.74*	23.29	25.02
Attachment	22.92	26.05**	24.69	26.86**
Behavior Concerns	7.41	7.36	5.47	5.97
Total Protective Factors	71.15	82.80**	78.46	84.45**

M=male F=female

\*\* Significant difference between baseline and outcome  $p \leq .01$

\* Significant difference between baseline and outcome  $p \leq .05$

(Note: significance tests reported are between baseline and outcome within gender)

**Figure 1: Baseline and Outcome DIBELS and DECA Mean Scores by Gender**

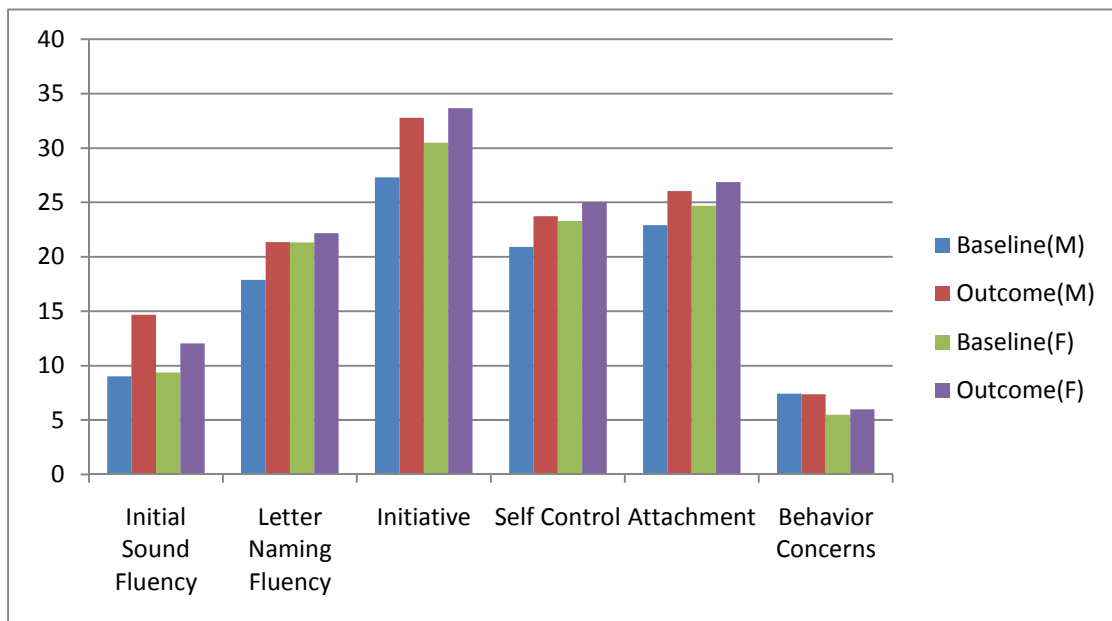


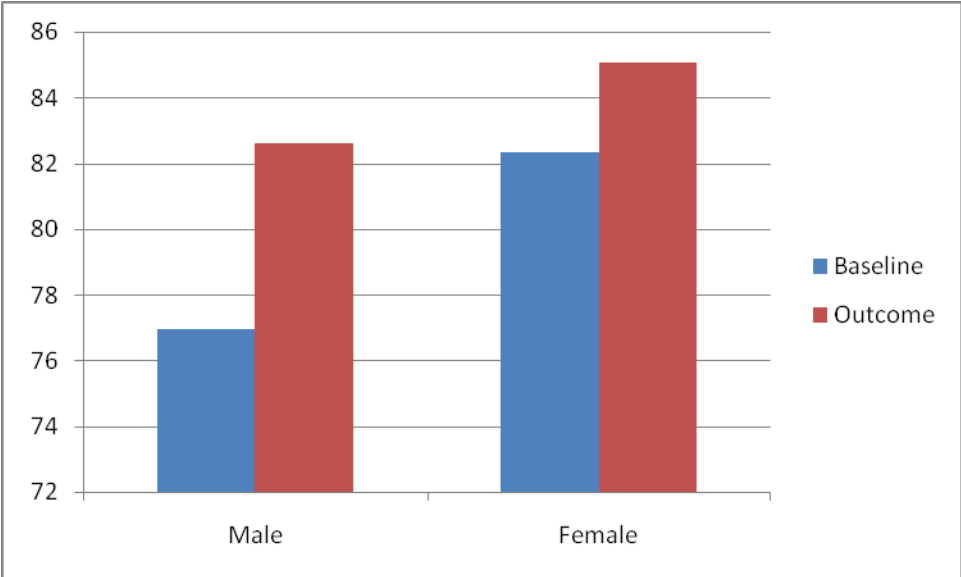
Table 16, below, presents the total protective factor scores by gender at baseline and outcome. Change on the total protective factor score was significant for boys and girls.

**Table 16: Total Protective Factors at Baseline and Outcome by Gender**

MEASURE	Baseline(M)	Outcome(M)	Baseline(F)	Outcome(F)
Total Protective Factors	71.15	82.80**	78.46	84.45**

\*\* Significant difference, baseline to outcome p < .01

**Figure 2. Change from Baseline to Outcome on Total Protective Factors by Gender**



### **Impact: Kindergarten Readiness**

The Phonological Awareness Test is administered in the fall to assess Kindergarten through second grade ability on five phonemic<sup>2</sup> awareness tasks: segmentation, isolation, deletion, substitution and blending. These tasks provide measures of rhyming, knowledge of graphemes and decoding skills which are used in our analysis (i.e., rhyming, deletion and blending). The domains of the Phonological Awareness Test (PAT) provide the following measures based on task performance:

- Rhyming discrimination tasks measure ability to identify rhyming words presented in pairs;
- Rhyming production tasks measure ability to provide a rhyming word given a stimulus word;
- Deletion tasks for compounds and syllables measure ability to say a word and then say it again, deleting one root word or syllable.
- Deletion tasks for phonemes measure ability to say a word and then say it again deleting one of the word's phonemes or sounds.
- Blending tasks for phonemes measure the ability to blend phonemes<sup>1</sup> together to form a word when the phonemes are presented individually.

Scores for each of the PAT measures range from one (1) to ten (10). Percentile ranks and standard scores have been derived which can be used to assist in interpretation. Rhyming discrimination raw scores and production raw scores are added together to produce the rhyming total score. Scores on deletion for compounds and syllables are added to scores on deletion for phonemes to obtain the deletion total score. The analysis presented below uses the total scores for rhyming, deletion and blending.

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<sup>2</sup> Phoneme is defined as the smallest posited structural unit that distinguishes meaning. Phonemes are not the physical [segments](#) themselves, but, in theoretical terms, cognitive [abstractions](#) or categorizations of them. An example of a phoneme is the /t/ sound in the words *tip*, *stand*, *water*, and *cat*. (In transcription, phonemes are placed between slashes, as here.) These instances of /t/ are considered to fall under the same sound category despite the fact that in each word they are pronounced somewhat differently. The difference may not even be audible to native speakers. That is, a phoneme may encompass several recognizably different *speech sounds*, called [phones](#). In our example, the /t/ in *tip* is [aspirated](#), [t<sup>h</sup>], while the /t/ in *stand* is not, [t]. (In transcription, speech sounds that are not phonemes are placed in brackets, as here.) In many languages, such as [Korean](#) and [Spanish](#), these phones are different phonemes: For example, /tol/ is "stone" in Korean, whereas /t<sup>h</sup>ol/ is "grain of rice". In Spanish, there is no aspirated [t<sup>h</sup>], but the phone in American English *writer* is similar to the Spanish *r /ɾ/* and contrasts with Spanish /t/. Found on Wikipedia at: <http://en.wikipedia.org/wiki/Phoneme> searched on 8-8-2008.

Table 17 presents the overall results of the PAT rhyming, deletion and blending total scores for all students.

**Table 17. PAT Total Rhyming, Deletion and Blending Phonemes Scores**

PAT rhyming total raw score	14.84
	246
PAT deletion total raw score	8.64
	237
PAT blending phonemes raw score	4.26
	178

Table 18 presents the rhyming, deletion and blending scores converted to percentile scores. Overall, students scored near the 60<sup>th</sup> percentile on each of the three domains of the PAT (rhyming  $\bar{X}$  = 60.66, deletion  $\bar{X}$  = 57.70, blending  $\bar{X}$  = 66.79).

**Table 18. PAT Total Rhyming, Deletion and Blending Phonemes Percentile Scores**

PAT rhyming total percentile	60.66
	246
PAT deletion total percentile	57.70
	237
PAT blending phonemes percentile	66.79
	178

Table 19 presents PAT rhyming, deletion and blending total scores and percentile scores by gender. Significant differences by gender were not found on PAT scores.

**Table 19. PAT Total Rhyming, Deletion and Blending Scores by Gender**

		Male	Female	Total
PAT rhyming total raw score	Mean	14.92	14.90	14.91
		106	122	228
PAT deletion total raw score	Mean	8.62	8.60	8.61
		104	116	220
PAT blending phonemes raw score	Mean	4.37	4.01	4.18
		79	86	165
PAT rhyming total percentile	Mean	61.48	60.35	60.88
		106	122	228
PAT deletion total percentile	Mean	57.28	57.81	57.56
		104	116	220
PAT blending phonemes percentile	Mean	67.04	65.73	66.36
		79	86	165

Table 20 presents PAT rhyming, deletion and blending total scores and percentile scores for students who did not attend Benton County pre-school compared to those who did attend. Significant differences were not found on PAT scores.

**Table 20. PAT Total Rhyming, Deletion and Blending Scores by PreSchool Attendance**

		Did not attend	Attended
PAT Rhyming	Mean	14.89	14.81
	Valid N	105	141
PAT Deletion	Mean	9.15	8.28
	Valid N	98	139
PAT Blending	Mean	4.31	4.23
	Valid N	75	103
PAT Rhyming Percentile	Mean	61.68	59.90
	Valid N	105	141
PAT Deletion Percentile	Mean	60.71	55.57
	Valid N	98	139
PAT Blending Percentile	Mean	65.81	67.50
	Valid N	75	103

Table 21 presents PAT rhyming, deletion and blending total scores by gender and whether or not they attended a project preschool. Girls who attended project PreK scored higher on all three PAT domains than those who did not attend. The differences for rhyming and deletion were significant. For boys, those who did not attend project PreK scored higher than those who did attend.

**Table 21. PAT Total Rhyming, Deletion and Blending Scores by Gender and PreK**

	Male		Female		Group Total
	Did Not Attend	Attended	Did Not Attend	Attended	
PAT rhyming total raw score Mean	15.85	13.92	13.75	*15.31	14.91
	55	51	32	90	228
PAT deletion total raw score Mean	10.02	7.26	7.73	**8.91	8.61
	51	53	30	86	220
PAT blending phonemes raw score Mean	4.43	4.29	3.28	4.21	4.18
	44	35	18	68	165
PAT rhyming total percentile Mean	67.05	55.47	54.56	*62.41	60.88
	55	51	32	90	228
PAT deletion total percentile Mean	65.29	49.57	53.63	**59.27	57.56
	51	53	30	86	220
PAT blending phonemes percentile Mean	66.82	66.31	58.72	67.59	66.36
	44	35	18	68	165

\*\* Significant difference between groups  $p < .01$

\* Significant difference between groups  $p < .05$

Table 22 below presents PAT total scores by gender and school at which they attend kindergarten.

**Table 22. PAT Total Rhyming, Deletion, and Blending Scores by Kindergarten and Gender**

		PAT Rhyming		PAT Deletion		PAT Blending	
		Mean	Valid N	Mean	Valid N	Mean	Valid N
Atkins	M	12.59	17	6.70	20	4.58	12
	F	15.53	17	6.44	18	5.75	12
Van Horne	M	15.75	12	8.36	11	5.08	12
	F	15.71	14	10.23	13	5.38	13
Norway	M	16.07	14	9.46	13	6.08	12
	F	15.56	18	7.65	17	5.21	14
Tilford	M	14.86	44	8.50	38	3.67	27
	F	15.31	42	7.18	39	2.56	25
Shellsburg	M	13.86	7	5.67	9	1.00	5
	F	12.18	11	7.80	10	2.57	7
Longfellow Belle Plaine	M	16.92	12	13.31	13	4.73	11
	F	13.85	20	13.74	19	3.40	15
Total		14.91	228	8.61	220	4.18	165

**Table 23. PAT Total Rhyming, Deletion, and Blending Percentile Scores by Kindergarten and Gender**

		PAT Rhyming		PAT Deletion		PAT Blending	
		Mean	Valid N	Mean	Valid N	Mean	Valid N
Atkins	M	49.53	17	48.35	20	73.75	12
	F	61.82	17	46.67	18	79.17	12
Van Horne	M	67.33	12	57.73	11	72.75	12
	F	65.29	14	66.92	13	73.77	13
Norway	M	68.21	14	61.54	13	79.08	12
	F	63.72	18	53.76	17	76.36	14
Tilford	M	61.14	44	56.42	38	60.33	27
	F	62.98	42	50.51	39	53.68	25
Shellsburg	M	50.86	7	40.67	9	35.00	5
	F	48.00	11	54.00	10	55.71	7
Longfellow Belle Plaine	M	72.17	12	80.38	13	71.36	11
	F	53.90	20	82.74	19	62.87	15
Total		60.88	228	57.56	220	66.36	165

## Multivariate Analysis

Least squares (multiple regression) is unbiased and consistent under many conditions assuming certain assumptions are met. These assumptions are that the relations among the variables are linear, additive, and causal; that the disturbance terms are uncorrelated with variables which precede them in the model; and that they are uncorrelated among themselves. Regression is a relatively robust statistical technique and was employed to compute successive reduced-form equations to determine the most parsimonious set of explanatory variables for the three total PAT scores.

Table 24 and Figure 3 present and illustrate explanatory power of the initial assessments (gender, initial sound fluency, letter naming fluency, initiative, self-control, attachment and behavioral concerns) and intervening or subsequent assessments (denoted as assessment 2). Successive reduced form and structural equation models indicate that the most parsimonious set of statistically significant factors which predict PAT rhyming scores are initial sound fluency and behavioral concerns (or absence thereof). Together, these two measures taken during the fall of the preschool year explain 27 percent of the variation in rhyming total scores.

**Table 24. Regression Coefficients and Explained Variation for PAT Rhyming Scores**

	Baseline	[reduced]	Intervening Outcome	Final Reduced Model
Gender	<b>0.187</b>	<b>0.212</b>	0.071	
Initial Sound Fluency	<b>0.403</b>	<b>0.434</b>	<b>0.325</b>	<b>0.382</b>
Letter Naming Fluency	0.081			
Initiative	-0.084			
Self Control	0.051			
Attachment	0.017		-0.131	
Behavioral Concerns	-0.120		<b>-0.272</b>	
Attachment 2				
Behavioral Concerns 2				<b>-0.286</b>
<b>R<sup>2</sup></b>	<b>0.26</b>	<b>0.24</b>	<b>0.25</b>	<b>0.27</b>

coefficients in bold are sig.  $p \leq .05$

**Figure 3. Model of Factors Affecting Scores on PAT Rhyming Scores**

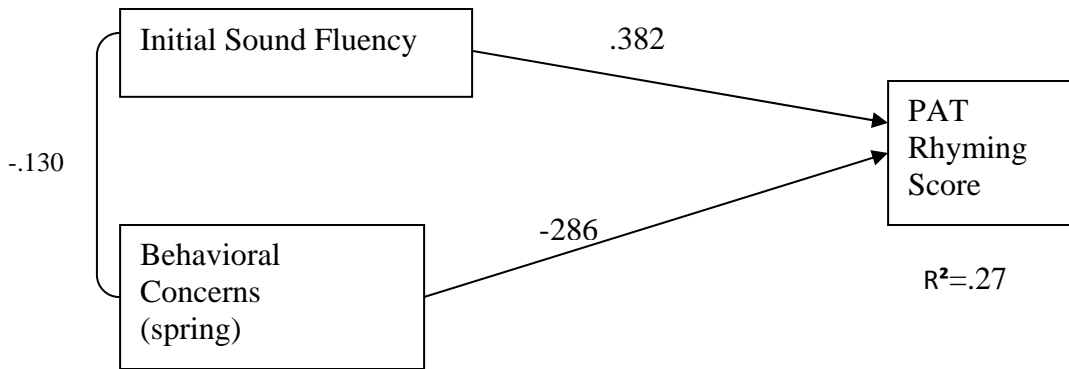


Table 25 and Figure 4 present and illustrate explanatory power of the initial assessments (gender, initial sound fluency, letter naming fluency, initiative, self-control, attachment and behavioral concerns) and intervening or subsequent assessments. Successive reduced form and structural equation models indicate that the most parsimonious set of statistically significant factors which predict PAT deletion scores are fall initial sound fluency and letter naming fluency scores. Together, these two measures taken during the fall of the preschool year explain 43 percent of the variation in rhyming total scores.

**Table 25. Regression Coefficients and Explained Variation for PAT Deletion Scores**

	Initial	[reduced]	Intervening Outcomes	Final Reduced Model
Gender	0.131			
Initial Sound Fluency	<b>0.248</b>	<b>0.247</b>	<b>0.304</b>	<b>0.247</b>
Letter Naming Fluency	<b>0.540</b>	<b>0.554</b>	<b>0.497</b>	<b>0.554</b>
Initiative	0.025		0.063	
Self Control	0.072		-0.255	
Attachment	0.054		0.132	
Behavioral Concerns	0.007		-0.144	
Initial Sound Fluency 2			-0.189	
Letter Naming Fluency 2			0.129	
Attachment 2			0.132	
Behavioral Concerns 2			-0.114	
<b>R<sup>2</sup></b>	<b>0.45</b>	<b>0.43</b>	<b>0.46</b>	<b>0.43</b>

coefficients in bold are sig.  $p \leq .05$

Figure 4. Model of Factors Affecting Scores on PAT Deletion Scores

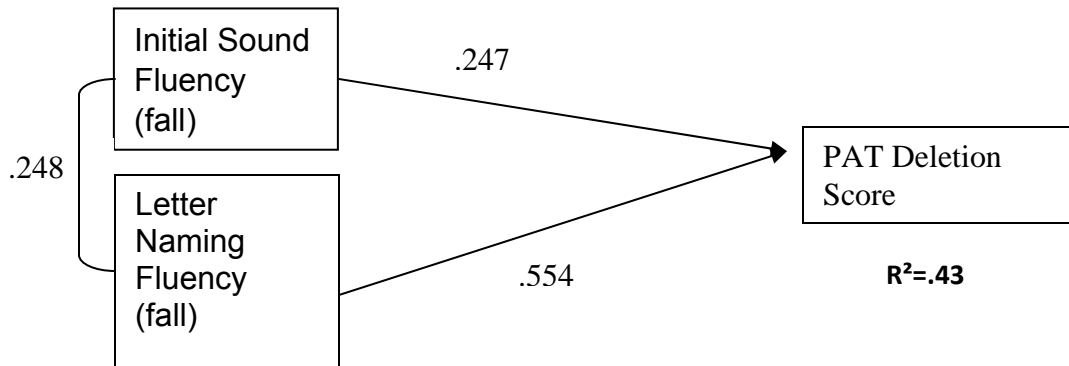


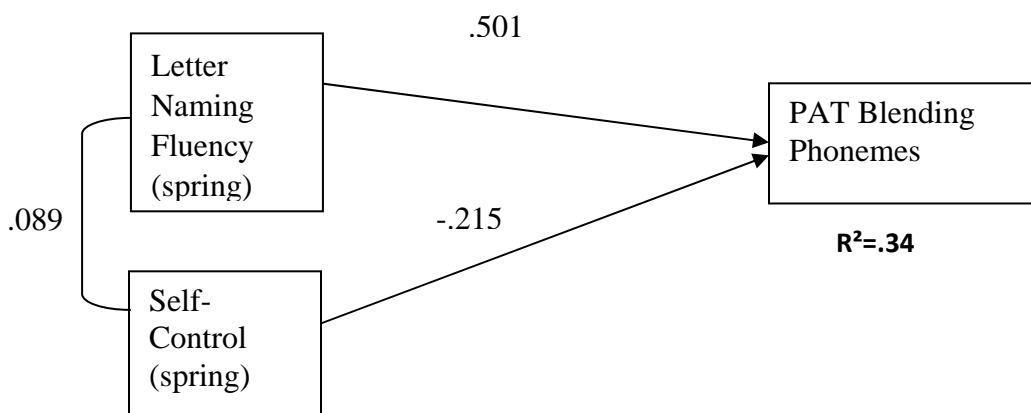
Table 26 and Figure 5 present and illustrate explanatory power of the initial assessments (gender, initial sound fluency, letter naming fluency, initiative, self-control, attachment and behavioral concerns) and intervening or subsequent assessments. Successive reduced form and structural equation models indicate that the most parsimonious set of statistically significant factors which predict PAT blending phonemes scores are spring initial sound fluency and self control. Together, these two measures taken during the fall of the preschool year explain 34 percent of the variation in rhyming total scores.

Another model using income was tested which resulted in an  $R^2$  of .36; however, income was measured using average income by school district rather than family (individual level) income measures. Therefore, the use of such a model would be unreliable due to a concept known as the ecological fallacy, a term coined by Robinson (1950). Robinson found that when he correlated the literacy rate and the proportion of the population born outside the US for the states (48 at the time) there was a significant positive correlation between the percent of the population born outside the U.S. and the literacy rate of .53. When individual data were used the correlation was  $-0.11$  — individually immigrants were on average less literate than native citizens. “Robinson showed that the positive correlation at the level of state populations was because immigrants tended to settle in states where the native population was more literate. He cautioned against deducing conclusions about individuals on the basis of population-level, or “ecological” data” (Wikipedia, 2009).

**Table 26. Regression Coefficients and Explained Variation for PAT Blending Phonemes Scores**

	Initial	[reduced]	[reduced 2]	Intervening Outcome	Final Reduced Model
Gender	0.044				
Initial Sound Fluency	<b>0.291</b>	<b>0.343</b>	<b>0.343</b>	0.158	
Letter Naming Fluency	<b>0.214</b>	<b>0.136</b>			
Initiative	0.109				
	-				
Self Control	0.278				
	-				
Attachment	0.231				
	-				
Behavioral Concerns	0.153				
Initial Sound Fluency 2				-0.038	
Letter Naming Fluency 2				<b>0.458</b>	<b>0.501</b> <b>0.490</b>
Initiative 2				0.002	
Self Control 2				-0.239	<b>-0.215</b>
Attachment 2				-0.022	
Behavioral Concerns 2				0.002	
INCOME					<b>0.324</b>
<b>R<sup>2</sup></b>					
coefficients in bold are sig. p ≤ .05	<b>0.25</b>	<b>0.16</b>	<b>0.16</b>	<b>0.34</b>	<b>0.34</b> <b>0.36</b>

**Figure 5. Model of Factors Affecting Scores on PAT Blending Phonemes Scores**



## Parent Survey

Thirty-four PreK parents responded to a parent survey and indicated that preschool had helped their child improve in many areas. Table 27 presents responses to a series of questions about how preschool has helped children. Areas in which parents unanimously reported their children were helped by the preschools included being able to “point to and/or recognize letters in his/her name,” “use symbols or drawings to express his/her ideas,” “attempt to write letters in his/her name,” and “enjoy going to school.” “Recognizing rhyming words,” “identify the beginning sound of some words,” “match at least 3 letters with their sounds,” “identify at least half of the letters in the alphabet,” and language-understanding and using oral speech” were areas in which 82 to 97 percent of parents reported that preschool had helped their child. Helping their child to “recognize some common sight words,” and “read letters or words from left to right” was reported by 52 percent and 63 percent, respectively.

**Table 27. Parent Survey: Parents, Impressions on How Preschool Helped Their Child**

<b>Preschool has helped my child:</b>	<b>N</b>	<b>Avg. % who said YES</b>	<b>Std. Deviation</b>
recognize rhyming words	31	.81	.402
read letters or words from left to right	30	.63	.490
identify the beginning sound of some words	32	.81	.397
recognize some common sight words	31	.52	.508
point to and/or recognize letters in his/her name	33	1.00	.000
match at least 3 letters with their sounds	31	.84	.374
use symbols or drawings to express his/her ideas	31	1.00	.000
attempt to write letters in his/her name	33	1.00	.000
identify at least half of the letters in the alphabet	32	.97	.177
enjoy going to school	33	1.00	.000
language-understanding and using oral speech	34	.82	.387

Parents impressions of their child’s progress in five areas are presented in Table 28, below. Progress in social skills was reported by 94 percent of parents. Progress was reported by 88 percent of parents on “Pre-academic/recognize colors, name, alphabet, numbers, songs.” “Self-care/taking care of his/her own needs” was reported by 85 percent; “motor-moving large muscles and using small muscles” was reported by 76 percent, and “positive problem solving skills” was reported by 71 percent.

**Table 28. Parent Survey: Parents’ Impressions on Their Child’s Progress During Preschool**

<b>During the preschool year, my child has made progress on:</b>	<b>N</b>	<b>Avg. % who said YES</b>	<b>Std. Deviation</b>
social-getting along w/ other children/adults	34	.94	.239
self-care-taking care of his/her own needs	34	.85	.359
motor-moving large muscles and using small muscles in hand	34	.76	.431
pre-academic-recognize colors, name, alphabet, numbers, songs	34	.88	.327
positive problem solving skills	34	.71	.462

Type of communication with pre-school teachers is presented in Table 29, below. Talking with me in person was reported by 91 percent; 79 percent reported receiving communication by newsletter; 41 percent reported receiving personal notes; 21 percent reported receiving phone calls.

**Table 29. Parent Survey: Parents’ Reports on How They Have Received Communication from the Preschool Teacher**

<b>I have received communication from the preschool teacher through:</b>	<b>N</b>	<b>Avg. % who said YES</b>	<b>Std. Deviation</b>
newsletter	34	.79	.410
talking with me in person	34	.91	.288
personal notes	34	.41	.500
phone calls	34	.21	.410

Table 30 presents the results on items that captured parent’s feelings about their child’s preschool. All respondents reported “the preschool showed support for the family’s language and culture.” “I feel that the teachers have a good attitude toward my child and me, “My child’s preschool makes me feel welcome no matter when I visit,” and “based on my child’s preschool experience, I feel my child will be more successful in kindergarten than if he/she had not gone to preschool” were reported by 97 percent of the parents. I feel my child’s teacher effectively communicates with me” was reported by 91 percent.

**Table 30. Parent Survey: Parents’ Feelings Toward the Preschool**

<b>OTHER</b>	<b>N</b>	<b>Avg. % who said YES</b>	<b>Std. Deviation</b>
I feel my child's teacher effectively communicates with me	34	.91	.288
I feel that the teachers have a good attitude toward my child and me	33	.97	.174
My child’s preschool makes me feel welcome no matter when I visit	34	.97	.171
My child’s preschool shows support for my family’s language and culture	31	1.00	.000
Based on my child’s preschool experience, I feel my child will be more successful in kindergarten than if he/she had not gone to preschool	34	.97	.171

**Strengths of the preschool**

When asked “what do you feel are the strengths of your child’s preschool,” 22 parents provided responses. Common themes were:

- Positive teacher comments (41%)
  - “Mrs. X was wonderful - having small kids of her own - she worked well with them. Child loved going.”
- Positive communication between teacher, student, and parent (23%)
  - “Communication was open for parents, caring for children, discipline, routine, high expectations.”
- Happy that the program was church/faith based (23%)
  - “We liked the fact that it is a church-based preschool that teaches basic bible stories along with all the regular preschool curriculum. The staff and board members seem very committed to making the preschool the best it can be. Teachers/assistants were very

caring with the children. I think the board members were all church members and at least several with children attending the preschool at the time.”

- Pleased with the student interactions and group socialization (14%)
  - “Since my child has never been away from me, preschool has reinforced his confidence in being independent and he has more confidence in himself as a whole.”

Other strengths of the preschool that were noted included:

- Communication and teaching – learning
- Communication was open for parents, caring for children, discipline, routine, high expectations.
- Communication skills of teachers with age of preschoolers.
- Energetic and loving teachers - accepting and accommodating to needs and differences.  
Wonderful community w/ parents.
- Faith, communication, of course the curriculum, safety, the interaction with parents.
- I love that it is in the elementary. I believe it made my child's transition to kindergarten easier, she doesn't feel scared when going to a bigger school. I love that there is a teachers' assistant.
- Interaction with other children; great hours for parents who work.
- Love, time, attention to individual needs, communication with parents frequently and openly and honest.
- Mrs. XX was wonderful - having small kids of her own - she worked well with them. Child loved going.
- Never forgetting each child's special needs. Encouraging of group socialization.
- Safe environment, promoting good morals, educating about Christian faith.
- My daughter enjoyed going to school. She was writing out almost all of her letters. She loved doing all the crafts. So the program that the kids have was all very good. Worth every bit of money.
- Since my child has never been away from me, preschool has reinforced his confidence in being independent and he has more confidence in himself as a whole.
- Small group - close - great with learning letters
- Structured; loving teachers; religious teachings; social interactions
- Teacher had expectations for all kids; preparation for both the academic and social aspects of kindergarten
- The teacher was very happy and positive.
- The teacher was wonderful; they were well prepared for kindergarten (2).
- The ways of learning the alphabet was very fun and effective for my child. Waiting your turn to speak and learning patience – things like that were also a good strength of my child's preschool. Bible time was also a very positive time for my child!
- We liked the fact that it is a church-based preschool that teaches basic bible stories along with all the regular preschool curriculum. The staff and board members seem very committed to making the preschool the best it can be. Teachers/assistants were very caring with the children. I think the board members were all church members and at least several with children attending the preschool at the time.
- With a small class the children get a lot of individual attention, welcoming atmosphere for parents to watch if need be.

When asked, "is there anything you would change to improve this preschool," 15 parents responded. The three most common themes were:

- Length or time of the program (27%)
  - "I think it should be longer and more days than 2.5 hours 3 times a week to make a better transition to next year all day every day (like everyday ½ days)."
- Curriculum--more assignments and less play time (20%)
  - "Doing more papers - activities for parents to see their progress. I really never got papers and even talked to Teacher and Principal regarding this issue."
- Price--too expensive (13%)
  - "Cost for me was an issue. In addition to paying daycare, \$95 was expensive."

### **Change to improve the preschool**

- Cost for me was an issue. In addition to paying daycare, \$95 was expensive.
- Discipline - there was an incident where my child was in trouble on a Friday and when we came back on Monday was made to sit in time out (I'm sorry but he had no idea what he had done by that time.) More communication b/w parents and teachers.
- Doing more papers - activities for parents to see their progress. I really never got papers and even talked to Teacher and Principal regarding this issue.
- have it three times a week
- I think 1/2 day every day would be a better transition to kindergarten.
- I think it should be longer and more days than 2.5 hours 3x a week to make a better transition to next year all day every day (like everyday ½ days).
- I would keep the program as a four day a week program and keep it free for now coming up with \$95 a month was hard some months.
- Keep Mrs. \_\_\_ as the teacher.
- less singing - more academics as far as identifying
- Maybe just security measures. Doors are open (unlocked during church/preschool hours) and anyone can get into the building/classrooms without warning. I think the preschool board is working on a solution for this.
- More one-on-one interaction.
- Snow days - cancellation. When late start kids did not have school that was hard for the kids to understand
- Teacher needs to be more organized. I feel the children could have gone on more than 1 field trip in the school year.
- The curriculum didn't seem to challenge my daughter, I think there should be assessment made so children that have talent don't get bored and vice versa. Children that need more help need to be addressed differently also, or challenged differently.
- Thinking back to this last school year nothing comes to mind of things I might change - there is always room for improvement.

## **Summary and Findings**

The results show that the participating pre-school students began their education with higher than average test scores. Using the Devereux Early Childhood Assessment (DECA) to measure social-emotional development, early preschool scores were at the 60<sup>th</sup> percentile for Initiative, 69<sup>th</sup> percentile for Self Control, 55<sup>th</sup> percentile for Attachment and the 31<sup>st</sup> percentile for Behavioral Concerns. Early literacy was measured using the Dynamic Indicators of Basic Early Literacy Skills (DIBELS); the mean score for Initial Sound Fluency was 10.13 and for Letter Naming Fluency the mean was 20.83.

Scores obtained near the time of pre-school graduation were higher than early pre-school scores and were significantly higher on many of the test scores; Behavioral Concerns also decreased. Scores on the DECA were at the 74<sup>th</sup> percentile for Initiative, 78<sup>th</sup> percentile on Self Control, 67<sup>th</sup> percentile on Attachment and the 29<sup>th</sup> percentile on Behavioral Concerns (DECA). The Initial Sound Fluency exit mean score was 13.06 and Letter Naming Fluency was 21.89 on the DIBELS.

Paired comparison scores were also higher within gender. Statistically significant differences were found for boys on Initial Sound Fluency, Initiative, Self-Control, Attachment and Total Protective Factors. Statistically significant differences were found for girls on Initial Sound Fluency, Initiative, Attachment and Total Protective Factors.

Parents reported perceptions consistent with the test scores. Parents reported that their child's pre-school experience was helpful for early literacy (e.g., recognize rhyming words, recognize letters) and for social emotional development (e.g., getting along with others, problem solving skills).

Each school district in Iowa must collect and report kindergarten assessment scores to the Iowa Department of Education. Accepted tests include DIBELS, PAT, Basic Reading Inventory, Early Literacy Assessments 8<sup>th</sup> edition or above, Observation Survey, Texas Primary Reading Inventory, and the Yopp-Singer Test of Phoneme Segmentation. In Benton County, the Phonological Awareness Test (PAT) is used. Kindergarten scores on three overall scales of the PAT for students in the local school districts were at the 61<sup>st</sup> percentile on rhyming, 58<sup>th</sup> percentile on deletion, and 67<sup>th</sup> percentile on blending phonemes.

For PAT Rhyming total scores, 27 percent of the variation was explained by early PreK Initial Sound Fluency and Behavioral Concerns scores at PreK exit. While the starting point (early PreK score) on Initial Sound Fluency was a good predictor for rhyming scores in Kindergarten on the PAT, Behavioral Concerns at exit were nearly as important in the opposite direction (lower behavioral concerns scores were correlated with higher Rhyming total scores) for predicting PAT rhyming scores.

For PAT Deletion total scores, 43 percent of the variation was explained by the early Initial Sound Fluency and Letter Naming Fluency scores. Starting points (initial scores) seem to matter much more for PAT Deletion total scores than for Rhyming or Blending Phonemes.

For the PAT Blending Phonemes scores, 34 percent of the variation in those scores was explained by Initial Sound Fluency and Self Control scores at exit from PreK. Pre-school exit scores seem to matter much more for Kindergarten PAT Blending Phonemes scores than for other PAT scores. Early PreK Initial Sound Fluency has a strong association with PAT Blending Phonemes scores, but counter-intuitively, those with lower Self Control scores at PreK exit exhibit a tendency for higher PAT Blending Phonemes. When correlations were examined, a negative correlation was found between PreK exit scores on Self Control and PAT Blending Phonemes. Lower Self Control scores at PreK exit are associated with higher Kindergarten PAT Blending Phonemes scores. However, lower scores on Self Control were also associated with lower Total Protective Factors (TPF) on the DECA and higher TPF scores are associated with higher PAT scores. More research is needed to unravel these statistical relationships.

Parent surveys indicate that children were perceived to have made progress during the PreK year on early literacy and in social emotional development. The findings of the present study of association between early literacy and social emotional development is consistent with other research linking social emotional growth and early learning and supports asset building as a key to early childhood development including literacy. Social emotional growth and developmental assets contributing to social emotional growth play a bigger role in success than demographic factors. Demographic factors such as age, gender and income “dropped out” as explanatory variables when they were included with other early learning and social emotional factors. The present findings are also consistent with findings from children who participated in the Johnson County, IA Early Learning Initiative with a family support worker targeting social emotional development as a key to improved early literacy scores (Richardson et. al, 2006; Richardson & Graf, 2006). In both studies we found statistically significant positive change in areas of development and behavior on standardized tests (DIBELS and DECA in the present study; Ages and Stages Questionnaire and DECA in Johnson County). Thus, high quality preschool facilities were indicated to be extremely important (Campbell & Ramey, 1994) for early childhood learning and development.

## **Conclusion and Recommendations**

The results of the study indicate that social-emotional development can facilitate or decrease achievement on early literacy tests. Schools and PreK schools, “must attend to this aspect of the educational process for the benefit of all students” (Zins et al, 2004). As previous research has reported “When schools implement high quality social-emotional learning programs effectively, the academic achievement of children increases, incidences of problem behaviors decrease, and the relationships that surround each child are improved” (Elias, 2003; Richardson et al., 2005). In the context of the No Child Left Behind Act, emphasis on academic achievement needs to be balanced with social-emotional learning. Similar to Gewertz (2003) we conclude that “a deliberate and comprehensive approach to teaching children social and emotional skills can raise their grades and test scores, bolster their enthusiasm for learning, [and] reduce behavior problems....”

Previous research has suggested that teachers have expectations that can work for or against the child. While the parents who responded to the survey in the present study reported satisfactions with teachers, we would also note that teachers frequently get little or no training in proactive teaching of assets and skills for supporting positive behaviors. The teacher is a significant factor in developing academic success

(Richardson and Graf, 2006, 2005) and needs periodic “booster sessions” to maintain a strengths based approach which encourages early literacy performance and social emotional development.

Brain research has indicated that the right hemisphere of the brain is responsible for good interpersonal interactions and understanding relationships, The relational right brain development and “emotional intelligence” suggests that the brain develops better in concert with other brains – in social context. Therefore, emotions are critical to learning because they affect our attention, health, and memory. Cognitive (left brain) skills develop better with music and motor skills and emotional intelligence predicts future success. Deficits may also be compensated for through improved social and emotional development or made worse through poor self-care, lack of sleep, exercise or nutrition, poor parenting, further trauma, alcohol or drug use, etc. The optimal state of arousal for learning is a state of “relaxed alertness” which promotes learning and enhances memory. In contrast, punishment-based systems tend to be counter-productive because they increase stress and do not teach internalized emotional or behavioral self-regulation skills or other self-help assets.

Pre-schools should promote development of student assets, including social emotional learning, communication and literacy skills. The development of assets plays a key role in academic success. Varied learning experiences that build on prior knowledge and engage more parts of the brain and body encourage learning and retention. Social emotional development was shown to represent of more significant factor early literacy than demographic factors such as gender, age and income. Studies of developmental assets have shown that students with higher assets have higher grade point averages (GPA) and score higher on standardized tests. These results are consistent with the association between PAT scores and the social-emotional and early literacy scores. *Given these findings it is advisable that pre-schools systematically track social emotional development as well as early literacy and that pre-schools work in concert with school districts and kindergartens to track comparable measures.*

The following recommended actions are suggested by the results:

- A common or consistent set of social emotional and early literacy measures would aid in tracking and improving instruction and teacher interaction with students from PreK through early grades.
- To implement a common measures strategy requires support from school boards, superintendents, principals, and kindergarten teachers.
- Training sessions are needed for teachers to continually support strategies that promote positive behaviors.
- A common measures approach would also require training on adopted instruments along with data collection and reporting techniques for PreK and elementary teachers to ensure valid and reliable measurement.
- Communication with school boards, principals, preschool directors and PreK and Kindergarten teachers to implement and sustain tracking systems of school achievement from PreK to Kindergarten and beyond.
- Observation of a sample of test administrations would need to be conducted to monitor fidelity.
- The importance of completing all items (e.g., DECA) requires emphasis.
- Preschool parent surveys provide important information and should be administered in a timely manner prior to or immediately after the end of the school year to capture the most valid information.
- To provide the most accurate results requires that administration of instruments be at specified intervals and times of the school year (e.g. September) and again 8 months later (e.g. April or May).

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**Zero Order Correlations Between PAT, DIBELS and DECA Scores**

		PAT rhyming total raw score	PAT deletion total raw score	PAT blending phonemes raw score
Gender that includes those not in project preschools	Pearson Correlation	-.002	-.001	-.060
	Sig. (2-tailed)	.975	.985	.440
	N	228	220	165
Initial Sound Fluency score at baseline	Pearson Correlation	.415	.294	.350
	Sig. (2-tailed)	.000	.001	.000
	N	137	136	100
Letter Naming Fluency score at baseline	Pearson Correlation	.199	.577	.236
	Sig. (2-tailed)	.023	.000	.020
	N	130	129	96
fixed Initiative (IN) Subscale of DECA	Pearson Correlation	.167	.314	-.059
	Sig. (2-tailed)	.049	.000	.554
	N	140	138	102
Self-control (SC) Subscale of DECA	Pearson Correlation	.149	.172	-.176
	Sig. (2-tailed)	.079	.043	.078
	N	140	138	102
Fixed Attachment score	Pearson Correlation	.096	.165	-.202
	Sig. (2-tailed)	.257	.053	.041
	N	140	138	102
Fixed Behavioral concerns	Pearson Correlation	-.229	-.168	-.010
	Sig. (2-tailed)	.007	.049	.919
	N	140	138	102
Initial Sound Fluency Time 2	Pearson Correlation	.352	.140	.295
	Sig. (2-tailed)	.000	.151	.008
	N	113	107	79
Letter naming fluency Time 2	Pearson Correlation	.222	.491	.489
	Sig. (2-tailed)	.021	.000	.000
	N	109	103	77
fixed Initiative Score T2	Pearson Correlation	.083	.221	-.060
	Sig. (2-tailed)	.383	.021	.592
	N	114	109	83
Fixed selfcontrol score T2	Pearson Correlation	.032	.108	-.220
	Sig. (2-tailed)	.734	.263	.045
	N	114	109	83
Fixed Attachment score t2	Pearson Correlation	-.103	.073	-.165
	Sig. (2-tailed)	.274	.449	.137
	N	114	109	83
Fixed Behavioral concerns T2	Pearson Correlation	-.322	-.225	.046
	Sig. (2-tailed)	.000	.019	.682
	N	114	109	83

Notes:

**Dynamic Indicators of Basic Early Literacy Skills™ 6<sup>th</sup> Ed.  
University of Oregon  
Kindergarten Benchmark Assessment**

Name: \_\_\_\_\_ Teacher: \_\_\_\_\_

School: \_\_\_\_\_ District: \_\_\_\_\_

	Benchmark 1 Beginning/Fall	Benchmark 2 Middle/Winter		Benchmark 3 End/Spring		
Date						
Initial Sound Fluency						
Letter Naming Fluency						
Phoneme Segmentation Fluency						
Nonsense Word Fluency			CLS	WRC	CLS	WRC
Word Use Fluency (Optional)	(Optional)		(Optional)		(Optional)	

CLS = Correct letter-sound correspondences.  
WRC = Words recorded completely and correctly as a whole word.

Good, R. H., & Kaminski, R. A. (Eds.). (2002). Dynamic Indicators of Basic Early Literacy Skills (6th ed.). Eugene, OR: Institute for the Development of Educational Achievement. Available: <http://dibels.uoregon.edu/>.

DIBELS® Initial Sound Fluency

Short Form Directions

Make sure you have reviewed the long form of the directions in the *DIBELS Administration and Scoring Guide* and have them available. Say these specific directions to the student:

***This is mouse, flowers, pillow, letters.*** (point to each picture while saying its name) ***Mouse*** (point to mouse) ***begins with the sound /m/.***  
***Listen, /m/ mouse. Which one begins with the sounds /f/?***

<b>CORRECT RESPONSE:</b> Student points to flowers, you say	<b>INCORRECT RESPONSE:</b> If student gives any other response, you say,
<b><i>Good. Flowers begins with the sounds /f/.</i></b>	<b><i>Flowers</i></b> (point to flowers) <b><i>begins with the sounds /f/.</i></b> <b><i>Listen, /f/ flowers. Let's try it again. Which one begins with the sounds /f/?</i></b>

***Pillow*** (point to pillow) ***begins with the sound /p/.*** ***Listen, /p/ pillow. What sound does letters*** (point to letters) ***begin with?***

<b>CORRECT RESPONSE:</b> Student says /l/, you say	<b>INCORRECT RESPONSE:</b> If student gives any other response, you say,
<b><i>Good. Letters begins with the sound /l/.</i></b>	<b><i>Letters</i></b> (point to letters) <b><i>begins with the sound /l/.</i></b> <b><i>Listen, /l/ letters. Let's try it again. What sound does letters</i></b> (point to letters) <b><i>begin with?</i></b>

***Here are some more pictures. Listen carefully to the words.***

Notes

Benchmark K-3  
DIBELS® Word Use Fluency

<i>animals</i>	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27	___ C I
<i>computer</i>	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27	___ C I
<i>ant</i>	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27	___ C I
<i>felt</i>	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27	___ C I
<i>doctor</i>	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27	___ C I
<i>early</i>	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27	___ C I
<i>cut</i>	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27	___ C I
<i>earth</i>	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27	___ C I
<i>light</i>	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27	___ C I
<i>north</i>	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27	___ C I
<i>fix</i>	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27	___ C I
<i>block</i>	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27	___ C I
<i>party</i>	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27	___ C I
<i>ever</i>	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27	___ C I
<i>show</i>	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27	___ C I
<i>rumbled</i>	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27	___ C I
<i>shirt</i>	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27	___ C I
<i>dogs</i>	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27	___ C I
Total Words in Correct Sentences:		<input style="width: 50px;" type="text"/>

Benchmark K-1  
DIBELS® Initial Sound Fluency

- This is tomato, cub, plate, doughnut** (point to pictures).
1. Which picture begins with /d/? 0 1
  2. Which picture begins with /t/? 0 1
  3. Which picture begins with /k/? 0 1
  4. What sound does "plate" begin with? 0 1
- This is bump, insect, refrigerator, skate** (point to pictures).
5. Which picture begins with /sk/? 0 1
  6. Which picture begins with /r/? 0 1
  7. Which picture begins with /b/? 0 1
  8. What sound does "insect" begin with? 0 1
- This is rooster, mule, fly, soap** (point to pictures).
9. Which picture begins with /r/? 0 1
  10. Which picture begins with /fl/? 0 1
  11. Which picture begins with /s/? 0 1
  12. What sound does "mule" begin with? 0 1
- This is pliers, doctor, quilt, beetle** (point to pictures).
13. Which picture begins with /b/? 0 1
  14. Which picture begins with /pl/? 0 1
  15. Which picture begins with /d/? 0 1
  16. What sound does "quilt" begin with? 0 1

Time: \_\_\_\_\_ Seconds Total Correct: \_\_\_\_\_

$$\frac{60 \times \text{Total Correct}}{\text{Seconds}} = \text{_____ Correct Initial Sounds per Minute}$$

DIBELS® Letter Naming Fluency  
Short Form Directions

Make sure you have reviewed the long form of the directions in the *DIBELS Administration and Scoring Guide* and have them available. Say these specific directions to the student:

***Here are some letters*** (point to the student probe). ***Tell me the names of as many letters as you can. When I say “begin,” start here*** (point to first letter), ***and go across the page*** (point). ***Point to each letter and tell me the name of that letter. If you come to a letter you don’t know, I’ll tell it to you. Put your finger on the first letter. Ready, begin.***

Benchmark K-3  
DIBELS® Nonsense Word Fluency

h o j	r i j	a d	b o l	e m	__/13
b u v	h a j	e n	w o f	l o j	__/14
t u c	r u l	v a b	f u m	h a n	__/15
h o l	m u n	y u d	d a v	d u b	__/15
p a j	j a v	l a k	d i z	n o m	__/15
v i f	k o n	j u f	m i z	v u v	__/15
z e p	y a c	d a c	j o m	r e j	__/15
z u z	v u m	z u s	t e j	z u b	__/15
w o b	j e c	o c	r i t	d e f	__/14
n e b	k i f	w a b	o v	r u j	__/14

Total correct letter sounds (CLS): \_\_\_\_\_

Total words recoded completely and correctly (WRC): \_\_\_\_\_

Error Pattern: \_\_\_\_\_

Benchmark K-3  
DIBELS® Phoneme Segmentation Fluency

duck	/d/ /u/ /k/	gone	/g/ /o/ /n/	___/6
too	/t/ /oo/	seen	/s/ /ea/ /n/	___/5
rush	/r/ /u/ /sh/	hoot	/h/ /oo/ /t/	___/6
shop	/sh/ /o/ /p/	bat	/b/ /a/ /t/	___/6
pine	/p/ /ie/ /n/	should	/sh/ /uu/ /d/	___/6
hall	/h/ /o/ /l/	knock	/n/ /o/ /k/	___/6
row	/r/ /oa/	more	/m/ /or/	___/4
tip	/t/ /i/ /p/	used	/y/ /oo/ /z/ /d/	___/7
birds	/b/ /ir/ /d/ /z/	ground	/g/ /r/ /ow/ /n/ /d/	___/9
boots	/b/ /oo/ /t/ /s/	thank	/th/ /a/ /ng/ /k/	___/8
your	/y/ /or/	ranch	/r/ /a/ /n/ /ch/	___/6
hung	/h/ /u/ /ng/	cheese	/ch/ /ea/ /z/	___/6

Total: \_\_\_

Error Pattern:

Benchmark K-1  
DIBELS® Letter Naming Fluency

g	N	E	Y	R	l	V	d	H	Z
N	d	x	S	C	n	j	H	s	S
E	n	G	h	c	i	h	B	b	O
Y	F	p	D	L	i	q	c	D	Q
R	v	F	J	Z	M	P	o	p	u
l	G	A	f	V	B	P	k	m	l
V	M	e	r	y	z	a	L	U	A
d	y	q	v	w	u	T	w	N	U
H	j	K	e	r	X	T	z	Y	X
Z	x	f	m	W	W	s	J	l	k
l	E	R	K	g	N	E	Y	R	l

Total: \_\_\_\_\_

DIBELS® Word Use Fluency  
 Short Form Directions

Make sure you have reviewed the long form of the directions in the *DIBELS Administration and Scoring Guide* and have them available. Say these specific directions to the student:

***Listen to me use this word, “green.” (pause) The grass is green. Here is another word, “jump” (pause) I like to jump rope. Your turn to use a word, (pause) “rabbit.”***

<b>CORRECT RESPONSE:</b> If student uses the word correctly in a phrase, say	<b>INCORRECT RESPONSE:</b> If student gives any other response, say,
<b><i>Very good.</i></b>	<b><i>Listen to me use the word rabbit, (pause) “The rabbit is eating a carrot.” Your turn, “rabbit.”</i></b>

***OK. Here is your first word.***

Benchmark K-3  
 DIBELS® Letter Naming Fluency

n z v c j G g x V m  
 z i R Z n e M J l Y  
 v w K U d s o V z y  
 c A e w G T c q H O  
 j r K D i N J Z b s  
 G p T x g S Y I r B  
 g H u F j N S f L A  
 x X E q t u M f R Q  
 V p k B F W P U m C  
 m t v D P a h L y d  
 O k C h n z v c j G

Total: \_\_\_\_\_

Benchmark K-2  
DIBELS® Word Use Fluency

<i>fence</i>	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27	___ C I
<i>coach</i>	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27	___ C I
<i>front</i>	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27	___ C I
<i>which</i>	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27	___ C I
<i>nobody</i>	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27	___ C I
<i>meant</i>	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27	___ C I
<i>felt</i>	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27	___ C I
<i>path</i>	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27	___ C I
<i>woman</i>	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27	___ C I
<i>answered</i>	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27	___ C I
<i>stay</i>	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27	___ C I
<i>dragonfly</i>	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27	___ C I
<i>alone</i>	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27	___ C I
<i>pretty</i>	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27	___ C I
<i>else</i>	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27	___ C I
<i>open</i>	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27	___ C I
<i>tired</i>	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27	___ C I
<i>worms</i>	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27	___ C I

Total Words in Correct Sentences:

Benchmark K-1  
DIBELS® Word Use Fluency

<i>happy</i>	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27	___ C I
<i>rained</i>	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27	___ C I
<i>ago</i>	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27	___ C I
<i>ones</i>	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27	___ C I
<i>anything</i>	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27	___ C I
<i>rags</i>	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27	___ C I
<i>opened</i>	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27	___ C I
<i>makes</i>	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27	___ C I
<i>cried</i>	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27	___ C I
<i>alone</i>	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27	___ C I
<i>afraid</i>	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27	___ C I
<i>listen</i>	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27	___ C I
<i>catch</i>	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27	___ C I
<i>against</i>	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27	___ C I
<i>uncle</i>	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27	___ C I
<i>few</i>	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27	___ C I
<i>write</i>	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27	___ C I
<i>secret</i>	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27	___ C I

Total Words in Correct Sentences:

Benchmark K-2  
DIBELS® Initial Sound Fluency

This is yard, giraffe, present, bridge (point to pictures).

- |   |     |
|---|-----|
| 1. Which picture begins with /y/?       | 0 1 |
| 2. Which picture begins with /j/?       | 0 1 |
| 3. Which picture begins with /pr/?      | 0 1 |
| 4. What sound does "bridge" begin with? | 0 1 |

This is crutches, feather, toothpaste, city (point to pictures).

- |   |     |
|---|-----|
| 5. Which picture begins with /s/?         | 0 1 |
| 6. Which picture begins with /f/?         | 0 1 |
| 7. Which picture begins with /t/?         | 0 1 |
| 8. What sound does "crutches" begin with? | 0 1 |

This is dime, sofa, peanuts, horse (point to pictures).

- |   |     |
|---|-----|
| 9. Which picture begins with /h/?         | 0 1 |
| 10. Which picture begins with /s/?        | 0 1 |
| 11. Which picture begins with /d/?        | 0 1 |
| 12. What sound does "peanuts" begin with? | 0 1 |

This is mop, footprints, dishes, goat (point to pictures).

- |  |     |
|--|-----|
| 13. Which picture begins with /m/?       | 0 1 |
| 14. Which picture begins with /f/?       | 0 1 |
| 15. Which picture begins with /g/?       | 0 1 |
| 16. What sound does "dishes" begin with? | 0 1 |

Time: \_\_\_\_\_ Seconds                      Total Correct: \_\_\_\_\_

$$\frac{60 \times \text{Total Correct}}{\text{Seconds}} = \text{_____ Correct Initial Sounds per Minute}$$

Benchmark K-2  
DIBELS® Nonsense Word Fluency

- |       |       |       |       |       |      |
|-------|-------|-------|-------|-------|------|
| y i z | w a n | z o c | f u l | m i k | _/15 |
| z u m | n u f | k u n | r u v | f o d | _/15 |
| v e p | i j   | o p   | j u j | s u g | _/13 |
| z u z | o v   | v i t | w a m | b u k | _/14 |
| l e f | l u k | t e v | l o f | k o m | _/15 |
| j u f | t a m | n o l | r e z | k e c | _/15 |
| p u m | p o z | m u m | o l   | k a v | _/14 |
| r i v | k i c | k i s | k e m | v a k | _/15 |
| t e k | u t   | r i z | a j   | v e j | _/13 |
| y i l | j e v | n e g | s o m | j u p | _/15 |

Total correct letter sounds (CLS): \_\_\_\_\_

Total words recoded completely and correctly (WRC): \_\_\_\_\_

Error Pattern: \_\_\_\_\_

DIBELS® Nonsense Word Fluency  
Short Form Directions

Make sure you have reviewed the long form of the directions in the *DIBELS Administration and Scoring Guide* and have them available. Say these specific directions to the student:

**Look at this word** (point to the first word on the practice probe). **It's a make-believe word. Watch me read the word:** /s/ /i/ /m/ "sim" (point to each letter then run your finger fast beneath the whole word). **I can say the sounds of the letters, /s/ /i/ /m/** (point to each letter), **or I can read the whole word "sim"** (run your finger fast beneath the whole word).

**Your turn to read a make-believe word. Read this word the best you can** (point to the word "lut"). **Make sure you say any sounds you know.**

<p><b>CORRECT RESPONSE:</b> If the child responds "lut" or with some or all of the sounds, say</p> <p><b>That's right. The sounds are /l/ /u/ /t/ or "lut."</b></p>	<p><b>INCORRECT OR NO RESPONSE:</b> If the child does not respond within 3 seconds or responds incorrectly, say</p> <p><b>Remember, you can say the sounds or you can say the whole word. Watch me: the sounds are /l/ /u/ /t/</b> (point to each letter) <b>or "lut"</b> (run your finger fast through the whole word). <b>Let's try again. Read this word the best you can</b> (point to the word "lut").</p>
---	---

Place the student copy of the probe in front of the child.

**Here are some more make-believe words** (point to the student probe). **Start here** (point to the first word) **and go across the page** (point across the page). **When I say "begin," read the words the best you can. Point to each letter and tell me the sound or read the whole word. Read the words the best you can. Put your finger on the first word. Ready, begin.**

Benchmark K-2  
DIBELS® Letter Naming Fluency

S	l	u	n	s	X	k	U	x	i
l	D	H	h	T	c	r	D	g	t
u	a	n	r	U	w	C	M	J	i
n	q	R	m	t	X	O	R	B	F
s	d	l	d	w	a	f	E	F	W
X	m	z	c	j	C	Q	I	S	b
k	J	B	O	W	h	q	K	s	o
U	N	b	V	v	k	p	g	p	A
x	M	A	Z	L	u	K	G	e	V
i	Y	Y	N	P	G	T	j	Q	y
L	v	f	I	S	l	u	n	s	X

Total: \_\_\_\_\_

DIBELS® Phoneme Segmentation Fluency  
Short Form Directions

Make sure you have reviewed the long form of the directions in the *DIBELS Administration and Scoring Guide* and have them available. Say these specific directions to the student:

***I am going to say a word. After I say it, you tell me all the sounds in the word. So, if I say, “sam,” you would say /s/ /a/ /m/. Let’s try one. (one second pause) Tell me the sounds in “mop.”***

<b>CORRECT RESPONSE:</b> If student says, /m/ /o/ /p/, you say	<b>INCORRECT RESPONSE:</b> If student gives any other response, you say.
<b><i>Very good. The sounds in “mop” are /m/ /o/ /p/.</i></b>	<b><i>The sounds in “mop” are /m/ /o/ /p/. Your turn. Tell me the sounds in “mop.”</i></b>

***OK. Here is your first word.***

Benchmark K-2  
DIBELS® Phoneme Segmentation Fluency

hat	/h/ /a/ /t/	hear	/h/ /ea/ /r/	___/6
as	/a/ /z/	punch	/p/ /u/ /n/ /ch/	___/6
means	/m/ /ea/ /n/ /z/	by	/b/ /ie/	___/6
seem	/s/ /ea/ /m/	ship	/sh/ /i/ /p/	___/6
ought	/o/ /t/	pack	/p/ /a/ /k/	___/5
jam	/j/ /a/ /m/	if	/i/ /f/	___/5
yell	/y/ /e/ /l/	ham	/h/ /a/ /m/	___/6
calls	/k/ /o/ /l/ /z/	ear	/ea/ /r/	___/6
key	/k/ /ea/	crowd	/k/ /r/ /ow/ /d/	___/6
loud	/l/ /ow/ /d/	choose	/ch/ /oo/ /z/	___/6
bare	/b/ /ai/ /r/	bills	/b/ /i/ /l/ /z/	___/7
guy	/g/ /ie/	stand	/s/ /t/ /a/ /n/ /d/	___/7

Total: \_\_\_

Error Pattern:



## The Devereux Early Childhood Assessment (for children ages 2 through 5 years)

Paul A. LeBuffe ■ Jack A. Naglieri

Child's Name \_\_\_\_\_ Gender \_\_\_\_\_ DOB \_\_\_\_\_ Age \_\_\_\_\_  
 Site/Program \_\_\_\_\_ Classroom \_\_\_\_\_  
 Person Completing this Form \_\_\_\_\_ Relationship to Child \_\_\_\_\_ Date of Rating \_\_\_\_\_

This form describes a number of behaviors seen in some young children. Read the statements that follow the phrase: *During the past 4 weeks, how often did the child...* and place a check mark in the box underneath the word that tells how often you saw the behavior. Please answer each question carefully. There are no right or wrong answers. If you wish to change your answer, put an **X** through it and fill in your new choice as shown to the right. Please do not skip any items.

Never	Rarely	Occasionally	Frequently	Very Frequently
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Item #	During the past 4 weeks, how often did the child...	Never	Rarely	Occasionally	Frequently	Very Frequently
1	act in a way that made adults smile or show interest in her/him?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2	do things for himself/herself?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	choose to do a task that was challenging for her/him?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	listen to or respect others?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	control her/his anger?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	respond positively to adult comforting when upset?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	participate actively in make-believe play with others (dress-up, etc.)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	fail to show joy or gladness at a happy occasion?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	touch children/adults inappropriately?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	show affection for familiar adults?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11	have temper tantrums?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12	keep trying when unsuccessful (act persistent)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13	handle frustration well?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14	have no reaction to children/adults?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15	use obscene gestures or offensive language?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16	try different ways to solve a problem?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17	act happy or excited when parent/guardian returned?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18	destroy or damage property?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19	try or ask to try new things or activities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20	start or organize play with other children?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21	show patience?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22	ask adults to play with or read to him/her?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23	have a short attention span (difficulty concentrating)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24	focus his/her attention or concentrate on a task or activity?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25	share with other children?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26	fight with other children?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27	become upset or cry easily?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28	say positive things about the future (act optimistic)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29	trust familiar adults and believe what they say?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
30	accept another choice when her/his first choice was unavailable?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
31	seek help from children/adults when necessary?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
32	ask other children to play with him/her?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
33	cooperate with others?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
34	calm herself/himself down when upset?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
35	get easily distracted?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
36	make decisions for himself/herself?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
37	show an interest in what children/adults are doing?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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