Development and Readability of the Center for Early Literacy Learning Parent Practice Guides

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The readability of the *Center for Early Literacy Learning* parent practice guides was assessed by nine readability formulae. The practice guides were all found to be written, on average, at a 5th to 6th grade level. The reader ages of the practice guides were all between 10 and 11 years. Analyses of the reading ease of the practice guides showed that they were considered *fairly easy* to *very easy* to read. The practice guides therefore were considered user-friendly and readable by adults who have completed at least elementary school.

This *CELLpaper* includes descriptions of both the development of the *Center for Early Literacy Learning (CELL)* parent practice guides and the results of analyses of the readability of the practice guides. The major aims of *CELL* are to: (1) synthesize research evidence on effective early literacy learning practices, (2) develop evidence-based practices from this research, (3) implement and evaluate the use of the practices, and (4) conduct both general and specialized technical assistance promoting the adoption and use of the *CELL* practices. *CELL* is an early childhood technical assistance center funded by the U.S. Department of Education, Office of Special Education Programs.

CELL staff are developing practice guides in multiple formats (paper, DVDs, Power Point, Podcasts, etc.) for both parents and practitioners. The practice guides include practices for infants, toddlers, and preschoolers birth to age six. Three types of practice guides are being developed: Universal practice guides that can be used with any child, practice guides with adaptations to make it easier for young children with disabilities to participate in literacy activities, and spe-

cialized practice guides for young children with specific types of disabilities. In addition to being prepared in English, many of the practice guides are being translated into Spanish.

The practice guides are formatted in a similar manner to make it easy for users to understand their purpose, content, and intended outcomes. Each practice guide includes a brief description of the practice, examples of what the practice looks like when it is implemented, suggestions for how the practice might be used, procedures for evaluating the effects of the practice, and vignettes illustrating parents or practitioners implementing the practices The consistency in how the practice guides are prepared is intended to promote familiarity with and use of the practice guides in the ways intended (Cohen & Snowden, 2008).

The practice guides all have a common set of evidence-based features as well as evidence-based characteristics specific to the particular literacy area or domain constituting the focus of a practice (e.g., Dunst & Gorman, 2009; Dunst, Trivette, & Hamby, 2007; Trivette & Dunst, 2007b). The common features are: (1) interest-based child learning activities and opportunities (Laakso, Poikkeus, Eklund, & Lyytinen, 2004; Ortiz, Stowe, & Arnold, 2001; Pruden, Hirsh-Pasek, Golinkoff, & Hennon, 2006), (2) active child participation in the learning activities or opportunities (Newman, 1996; Rogoff, Mosier, Mistry, & Göncü, 1993; Trivette & Dunst, 2007a), (3) learning opportunities that occur as part of everyday activities and routines (Gallimore & Goldenberg, 1993; Hall, 2000; Neuman, 2000), and the use of responsive teaching procedures for supporting and encouraging early child literacy learning (Evans, Moretti, Shaw, & Fox, 2003; Kaiser, Hemmeter, Ostrosky, Fischer, Yoder, & Keefer, 1996;

Paavola, Kemppinen, Kumpulainen, Moilanen, & Ebeling, 2006). To the extent possible and appropriate, these elements are all embedded into the practice guides by the ways the practices are described and illustrated.

The practice guides are organized in seven categories corresponding to the literacy domains constituting the focus of *CELL* (Dunst, Trivette, Masiello, Roper, & Robyak, 2006). The categories are: Literacy-rich environments and experiences, alphabet awareness and knowledge, print awareness, written language, text comprehension, sound and phonological awareness, communication and oral language, and listening comprehension. There are multiple practices in each of those areas except alphabet awareness for infants. Both the parent and practitioner practice guides can be viewed on the *CELL* website *www.earlyliteracylearning.org*.

This *CELLpaper* presents the results of the readability analyses of the parent practice guides. The most read material worldwide is written at a 9th grade level (Impact Information, 2005). The versions of the parent practice guides on the *CELL* website were written, revised, and rewritten to ensure the readability of the practice guides was below a 9th grade level. The lower the reading level of a document, the more likely it will be read (DuBay, 2007), and the more familiar a reader is with a document, the more likely it will be understood and its content used (Cohen & Snowden, 2008).

METHOD

Procedure

Each practice guide was analyzed using nine readability formulae that use word familiarity and different syllable, word, and sentence counts for determining the reading level of a document (Anderson, 1981; Bjornsson, 1983; Bormuth, 1969; Carver, 1985; Chall & Dale, 1995; Fry, 1977; Harris & Jacobson, 1982; Kincaid, Fishburne, Rogers, & Chissom, 1975; Raygor, 1977). The different readability formulae produce a grade level, reader age, or reading ease index, or a combination of these three measures. The readability formulae and measures are listed in Table 1. The readability measures are ones most applicable to documents similar to the practice guides. The analyses were performed using the Oleander (2009) *ReadabilityStudio* software package.

The readability formulae yielding grade levels do so using the metrics indicated on Table 1. The same is the case for calculating reader ages. For example, the *New Dale-Chall Test* (Chall & Dale, 1995) uses word familiarity and sentence length to obtain both a grade level and reader age. The formulae for computing reading ease indices each calculate a score that is interpreted using tables provided by the software. *The Flesch Reading Ease Test* (Flesch, 1979), for example, computes a score ranging from zero to 100, where the higher the score, the easier the readability of a document. A score between 60 and 69 is considered average, and a score between 70 and 79 indicates that a document is *fairly easy* to read.

Analysis

An average grade level and reader age, and the 95% confidence intervals for the averages, were computed for determining the readability of the practice guides. Average grade level and reader ages were computed for each set of practice guides (infant, toddler, preschool). The average reading ease indices and 95% confidence interval for the averages were determined separately from each formula since each measure is scored differently. The main focus of analysis was the extent to which the grade levels of the practice guides were at or below a 9th grade level. The main analysis was supplemented by the results from the reader ages and reading ease indices analyses.

Table 1

Formulae and Measures for Evaluating the Readability of the CELL Parent Practice Guides

Readability Formulae	Readability Metric					Readability Measure		
	Syllable Count	Sentence Length	Sentence Count	Word Familiarity	Word Length	Grade Level	Reader Age	Reading Index
Flesch-Kincaid	X	X				X	X	
Flesch Reading Ease Test	X	X						X
Fry Test	X		X			X	X	
LIX Test		X			X	X	X	X
New Dale-Chall Test		X		X		X	X	
Raygor Estimate			X		X	X	X	
Reading Power Test		X		X	X	X	X	X
RIX Test			X		X	X	X	X
Wide Range Readability Test		X		X		X	X	

RESULTS

Grade Level

Figure 1 shows the means and 95% confidence intervals for the grade levels of the three sets of practice guides. All the practice guides are written, on average, at a 5th to 6th grade level. The 95% confidence intervals for the average scores shows that nearly all the practice guides are written below a 6th grade level.

Examination of the individual formulae results showed that the grade levels ranged between 4 and 6. For example, the results for the *New Dale-Chall Test* (Chall & Dale, 1995), one of the most widely used readability measures, yielded an average grade level of 3.74 (95% CI = 3.60-3.88) for all the practice guides. The grade levels for all the practice guides are at least three grades below the grade level (9th) of the most widely read material worldwide (DuBay, 2007; Impact Information, 2005).

Reader Age

The mean reader ages for the practice guides are shown in Figure 2. The ages were all between 10 and 11 years, and the 95% confidence intervals for the averages show that nearly all the practice guides have reader ages less than 11 years. The individual formulae results showed the reader ages of the practice guides ranged between 9 and 12. The *New Dale-Chall Test* (Chall & Dale, 1995) results showed that the average reader age was 9.23 (95% CI = 9.09-9.37). Most adults who have completed at least elementary school would therefore be able to read the practice guides with little difficulty.

Reading Ease

The results from the four reading ease measures showed that the practice guides are *fairly easy* to *very easy* to read. Figure 3 shows the reading ease scores for the *Flesch Reading Ease Indices* (Flesch, 1979). The averages and the 95% confidence intervals are well above the score (70) recommended for most reading material.

DISCUSSION

Findings showed that the *CELL* parent practice guides are written at grade levels making them readable to most adult readers. These results, together with findings from social validity studies of the practice guides, indicate they are both user friendly (Dunst, Trivette, Gorman, & Hamby, 2010; Trivette, Dunst, Masiello, Gorman, & Hamby, 2009) and are written in ways recommended by adult literacy experts (e.g., Cohen & Snowden, 2008; DuBay, 2007).

Although the parent practice guides are intended to be used by practitioners with parents, many parent use the practice guides without professional input or guidance (Trivette, Dunst, Masiello, Gorman, & Hamby, 2009). For that reason,
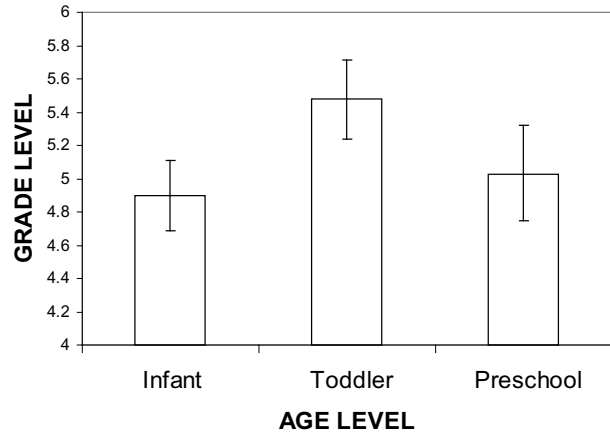
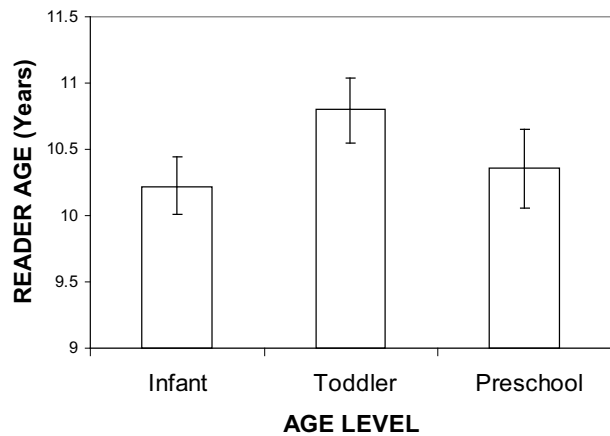**Figure 1. Average grade level and 95% confidence intervals for the three sets of parent practice guides.**

Figure 2. Average reader age and 95% confidence interval for the parent practice guides.
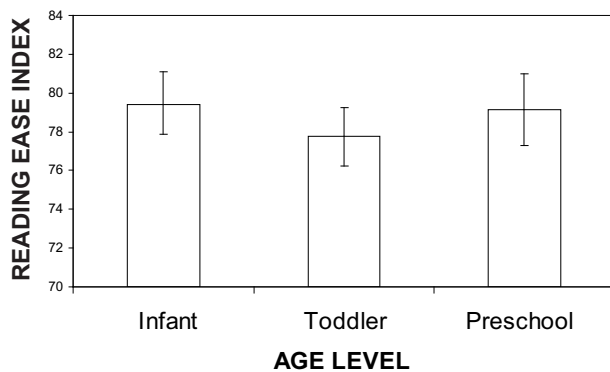
Figure 3. Average Flesch Reading Ease Indices and 95% confidence intervals for the parent practice guides. (NOTE. A Score of 70 or higher is considered the benchmark for a written document to be easy to read.)

establishing the readability of the practice guides was considered a necessary step in the overall design, development, and use of the practice guides. To the extent that is was possible,

the practice guides were written in plain English (DuBay, 2007) with a minimum of jargon and technical or professional language. The practice guides were also prepared using a format that we previously found effective for promoting adoption and use of evidence-based practices (e.g., Dunst, Pace, & Hamby, 2007; Trivette, Dunst, Hamby, & Pace, 2007). These factors as well as others (e.g., social validity) would therefore make the practice guides user-friendly to most parents.

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