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The Assessment of Oral Reading Fluency: Concurrent Validity of the Dynamic Indicators of

Basic Literacy Skills and Screening To Enhance Equitable Placement Measures

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by

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ABSTRACT

The Assessment of Oral Reading Fluency: Concurrent Validity of the Dynamic Indicators of

Basic Literacy Skills and Screening To Enhance Equitable Placement Measures

By Amie Honeman

Curriculum-based screening instruments such as DIBELS and STEEP can facilitate early identification of children with reading difficulties. This early detection process is crucial, as remedial efforts must be initiated swiftly in order to produce necessary gains in the performance of students struggling with the mastery of reading skills. The outlook for students who have failed to master basic reading skills by grade three is quite bleak. The current research study examines the concurrent validity of the Oral Reading Fluency measures of DIBELS and STEEP. Research has shown that Oral Reading Fluency is highly correlated with reading comprehension, thus it was selected as the basis for this study. DIBELS and STEEP each possess special characteristics that make them desirable for use in the classroom. This study attempts to provide information that can assist educators in selecting an appropriate instrument for their particular classroom needs.

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CHAPTER ONE: THE IMPORTANCE OF CURRICULUM BASED READING MEASURES

Those invested in education, are searching for answers to questions concerning the increasing number of students qualifying for special education placement. The financial cost for providing special education services for great numbers of students is prohibitive, yet would be more than justifiable if placements appeared to be creating positive gains for students. The most alarming concern is that special education placement does not appear to improve the scholastic outlook for children enrolled in such programs (Rasinki, 2004). Especially problematic, is the fact that many schools are failing to provide students with the basic instruction needed to gain literacy. This failure is especially true for children from disadvantaged backgrounds. Reading difficulty contributes greatly to special education placement. Hargrove, Church, Yssel, and Koch (2002) report "Most students placed in special education classes have difficulty learning to read." (p.148) A disproportionate amount of disadvantaged children are placed in special education classes for this reason. For the past twenty-five years NAEP reading results have indicated that children from low-income environments experience reading failure at a much greater rate than middle-income or high-income children (Reid & Chhabra, 2004). One of the major reasons for the gap in reading performance between children of differing economic levels is the low level of verbal and literacy interaction experienced between low-income children and their parents during the preschool years. This interaction is the basis that supports skilled reading (Reid & Chhabra, 2004). These children enter schools with a distinct disadvantage, many lagging behind their middle-class and high-class peers in academic skills from the very beginning.

Frustrating, but at the same time encouraging, is the knowledge that most children can learn to read regardless of the skills they bring to their first school experiences.

If at risk readers are identified early, in kindergarten or elementary school, and provided intensive instruction, they can learn to read at average or above average levels (Reid & Chhabra, 2004). It is reassuring that the number of children reading below basic levels can be decreased to less than 6 percent if struggling readers are identified early and given intense appropriate instruction (Reid & Chhabra,2004). On the other hand, dire consequences may be predicted for those children who do not receive the necessary help. Most unsettling, is the fact that 70% of children who fail to read by age nine will face a lifetime of illiteracy (Reid & Chhabra, 2004).

Since early identification is key in diagnosing and treating reading problems, the ideal situation would be to implement a universal screening devise to all children early in the school year. With this method, teachers are able to identify those children needing additional assistance and provide them with the extra instruction they require. At risk children should then be monitored throughout the school year for necessary gains in reading skills. Both DIBELS and STEEP are curriculum-based measurements that can be used in the classroom to suit these purposes.

CHAPTER TWO: ORAL READING FLUENCY

Oral reading fluency is one of the basic skills in reading, as determined by the National Reading Panel, emphasized in The No Child Left Behind Act. The other four skills are phonemic awareness, phonics, vocabulary, and comprehension (Stewart, 2004). The No Child Left Behind Act of 2001 has impacted the way classrooms and schools in the United States have approached reading education. The act emphasizes that reading instruction must be derived from scientifically based reading research (Stewart, 2004). The pressure to have children succeed in school has placed much emphasis on assessment and accountability.

Oral reading fluency is the ability to orally translate text with speed and accuracy. This ability gradually develops during the elementary school years. It can be measured by words read correctly per minute. A student's score can be compared normatively to the scores of peers or the development of oral reading fluency skill can be tracked for the individual student allowing for assessment of progress by that student (Feinberg & Shapiro, 2003).

It has been theorized that oral reading fluency provides a good reflection of overall reading competence (Jenkins, Fuchs,Van den Broek,Espin, & Deno, 2003).
The automaticity model of reading proposed by LaBerge and Samuels(1974) proposes that skilled reading requires shifting attention from word identification processing to the more demanding process of comprehension (Fuchs,Fuchs, Hosp,& Jenkins, 2001). In other words, students who can automatically identify words are able to devote needed attention to comprehending what has been read. Those who struggle with decoding words, focus important attentional processes on word identification and thus are unable shift attention to comprehension. "Problems in acquiring word-level reading are the principal difficulties faced by children who encounter reading problems in the primary grades"(Jenkins et al. 2003, p.719).

Oral reading fluency is one of the best indicators of reading comprehension for struggling readers. In 1988 Fuchs and Maxwell used the Reading Comprehension subtest of the Stanford Achievement Test as the criterion measure with which to correlate four other measures of reading comprehension, including oral reading fluency, question answering, passage recall, and cloze technique. The 75 participants in the study were middle school and junior high reading disabled students. The oral reading fluency correlation with the Stanford Achievement Test was significantly higher than the correlation for any of the other measures. The coefficient for oral reading fluency was .91 as compared to the next strongest correlation of .82 for question answering (Fuchs et al.,2001).

It is important to note that research by Fuchs, Fuchs, Hamlett, Waltz, and German (1993) indicates that the development of oral reading fluency occurs predominately through the primary grades then gradually decreases through the intermediate grades and into junior high. After the junior high school period, reading development switches focus to the analysis of literature and learning new material from complicated expository text. This result suggests that the connection between oral reading fluency and comprehension may be stronger in the elementary and junior high grades than in older students (Fuchs et al. ,2001).

CHAPTER THREE: DIBELS ORAL READING FLUENCY

DIBELS Oral Reading Fluency is intended for children from mid first grade through third grade. The benchmark goals are 40 in the spring of first grade, 90 in the spring of second grade and 110 in the spring of third grade. Students may need intensive instructional support if they score below 10 in the spring of first grade, below 50 in the spring of second grade and below 70 in the spring of third grade (DIBELS, 2003).

DIBELS Oral Reading Fluency (DORF) is a standardized instrument. It is administered individually and measures accuracy and fluency with connected text. The passages and procedures are based on research involving Curriculum-Based Measurement conducted by Stan Deno and colleagues at the University of Minnesota. The DORF is designed to identify children who may need instructional support and monitor progress toward instructional goals. Student performance is measured by having students read a passage aloud for one minute. Words omitted, substituted, and hesitations of more than three seconds are scored as errors. Words self-corrected within three seconds are scored as accurate. The number of correct words is the oral reading fluency rate. Students can be given an optional retell fluency assessment to tell if their oral reading fluency is consistent with their comprehension (DIBELS, 2003).

CHAPTER FOUR: STEEP ORAL FLUENCY

Steep is an evidence-based model that improves academic performance while reducing referrals and placement in special education. The Oral Fluency subtest is a one-minute timed reading of a passage appropriate for grade level. The number of words read correctly is the oral reading fluency rate. This rate is derived by counting the total words read, then subtracting errors. Errors are counted for mispronounced words, skipped words, transpositions of words, word substitutions, and words told to students after 3 seconds. Errors are not counted for words read correctly, insertions, repetitions, and self-corrections (Witt, 2002).

CHAPTER FIVE: DIBELS VS. STEEP

DIBELS and STEEP are both curriculum-based screening devices that include measurements of oral reading fluency. They are both research based and appear to assist with the diagnosis and treatment of reading problems. This said, the two screening instruments are not identical. Both DIBELS and STEEP have special components that make them desirable to educators.

The most important advantage DIBELS has over STEEP is its comparatively thorough assessment of reading skills. The five subtests of DIBELS include Letter Naming Fluency, Initial Sound Fluency, Phonemic Segmentation Fluency, Nonsense Word Fluency and Oral Reading Fluency. The Skills of Beginning Reading have directly influenced these DIBELS measures(DIBELS, 2003). The inclusion of five subtests that measure reading ability is advantageous since this allows educators to design instructional plans targeted at specific reading deficiencies. In comparison, STEEP's only reading assessment measurement is Oral Reading Fluency.

An advantage of STEEP over DIBELS is its ability to assess, not only reading, but math, writing and behavior. STEEP's design also makes it very applicable to use with Student Assistance Teams, since it is touted as a means to prevent unnecessary special education referrals. STEEP's three-tiered model is used to rule out problems such as educational disadvantage, lack of instruction and lack of motivation before referring a child for special education services. An interesting aspect of STEEP is the Can't Do or Won't Do assessment. This procedure involves offering the child a prize from a treasure chest as an incentive to do well on a task. If the student's performance improves with the incentive, this allows the teacher to assess lack of motivation (Witt, 2002).

Both DIBELS and STEEP are cost efficient. They are free. DIBELS offers access to the DIBELS data system reporting service for an expense of $1 per student annually (DIBELS,2003). Steep probes are also provided at no cost (Witt,2002). The measures are also time efficient and easy for teachers to administer. Most importantly both instruments arm teachers with data that can assist them in helping children with reading instruction and satisfy No Child Left Behind requirements.

CHAPTER SIX: PURPOSE OF THE STUDY

The purpose of the current study is to examine the concurrent validity of the Oral Reading Fluency measure of the DIBELS, a curriculum based measurement that has been shown to correlate with the CTOPP (Hintze, 2003), as compared to the Oral Reading Fluency measure of the STEEP, a similar curriculum based measurement, that includes math, writing, and behavior assessment features. This purpose will be achieved by correlating student's Oral Reading Fluency scores on the DIBELS with their Oral Reading Fluency Scores on the STEEP.

The purpose is to determine the appropriateness of utilizing the STEEP as an alternative to, or in conjunction with the DIBELS. The Math component of the STEEP makes it desirable in term of its ability to assess math and reading with one instrument. The results of this study may encourage educators to use STEEP as a classroom diagnostic tool to aid in the early identification of all learning problems.

CHAPTER SEVEN: HYPOTHESIS

It is hypothesized that a positive and significant correlation will exist between student's obtained Oral Reading Fluency scores on the DIBELS and STEEP instruments suggesting that the STEEP Oral Reading Fluency measure can be regarded as a valid inventory of student's oral reading fluency when compared to their DIBELS Oral Reading Fluency outcomes.

CHAPTER EIGHT: METHOD

Subjects

Three hundred and seventy students, 127 first graders, 112 second graders and 131 third graders participated in this study. All students attended Northwest Elementary School, which is located in a rural area of southeastern Ohio. The total enrollment for the school is 574 students. All of the subjects were Caucasian. 54% of the student body receives free or reduced lunch. The participants included were drawn from both regular and special education classrooms.

Instruments

In the fall of 2003, subjects were administered the Dynamic Indicators of Basic Reading Skills (DIBELS) Oral Fluency measure as suggested from the DIBELS administration manual. The Screening To Enhance Equitable Placement (STEEP) Oral Fluency measure was also administered during this same time period. Classroom teachers administered the assessment instruments.

Procedures

Permission was attained from the principal of Northwest Elementary School in order to obtain the student's STEEP and DIBELS data. For the purpose of this study, the Pearson Correlation method will be used to examine the relationship between DIBELS Oral Reading Fluency scores and STEEP Oral Reading Fluency scores. The correct words read per minute scores will be used to compare assessments.

Results

The purpose of this study was to investigate the concurrent validity between the oral reading fluency subtests of the DIBELS and STEEP reading measures. After gathering archival data from a small elementary school in rural southeastern Ohio, which includes the subject's demographics, DIBELS measures and STEEP measures, the data was then entered into the Comprehensive Statistical Software Program (SPSS) version 11.0. The data were subjected to Descriptive Statistic Analysis (see figure 1). In addition, the Pearson Product Moment Correlation was used to explore the relationship between the student's DIBELS Oral Reading Fluency Raw Scores and the STEEP Oral Reading Fluency Raw Scores (see figure 1).

Results of the study indicated a significant and positive correlation between the DIBELS'

Oral Reading Fluency measure and the STEEP's Oral Reading Fluency measure in the scores of

first, second and third grade students. For first grade students, DIBELS' ORF measure and

STEEP's ORF measure (r = .858, $\underline{p}$ =.000), for second graders DIBEL's ORF and STEEP's ORF

measure (r = .922, $\underline{p}$ =.000) and for third graders (r =.910, $\underline{p}$ = .000). The study results indicated

the concurrent validity between DIBELS Oral Reading Fluency and STEEP Oral Reading

Fluency measures were clinically significant for grades one, two and three ranging from r = .858,

$\underline{p}$ = .000 up to r = .922 and $\underline{p}$= .000.

CHAPTER NINE: CONCLUSION

This study examined the relationship between the DIBELS Oral Reading Fluency

measure and the STEEP Oral Reading Fluency Measure. The hypothesis of this study was that a

positive and significant correlation will exist between first, second, and third grade students'

obtained DIBELS Oral Reading Fluency raw scores and STEEP Oral Reading Fluency raw

scores suggesting these two instruments measure the same construct. The following question

was examined in this study: What is the concurrent validity of the DIBELS oral reading fluency

measures in relation to the STEEP oral reading fluency measures? The results of the study

indicated that the concurrent validity between the DIBELS Oral Reading Fluency measure and

the STEEP Oral Reading Fluency measure ranged from r = .858 and $\underline{p}$ = .000 to r = .922 and $\underline{p}$ =

.000.

CHAPTER 10: DISCUSSION

Variables not considered in this study might lead to better validity outcomes. One such variable to consider is the homogeneity of the population. Due to the geographical location of the school, the study was unable to include racial and ethnic minorities and various socioeconomic statuses. Including such variables of diversity in race, ethnicity, socioeconomic status and exploring these venues may provide additional insight into the study.

Another variable to consider may be that first graders were given the Oral Reading Fluency measure of DIBELS in January 2004, while STEEP Oral Reading Fluency assessments were completed in the beginning of the 2003-2004 school year. The structure of the DIBELS program created the delay in administration of the DIBELS Oral Reading Fluency measure. In the DIBELS program, first graders aren't assessed on Oral Reading Fluency until the middle of the school year. This delay in administration may have served to raise DIBELS Oral Reading Fluency scores due to learning that occurred in the interim between testing sessions. Both DIBELS ORF and STEEP ORF were administered to second and third graders at the beginning of the school year.

CHAPTER 11: RECOMMENDATIONS

Although the present study did not consider the variables discussed above, this study serves a purpose in that it demonstrates a positive significant relationship between the DIBELS Oral Reading Fluency measure and the STEEP Oral Reading Fluency Measure. That said, in regards to measuring oral reading fluency both measures appear to be effective. When deciding between DIBELS and STEEP as curriculum-based measurements, teachers will likely need to look beyond oral reading fluency to decide which is the better measurement for their purposes.

DIBELS is a more thorough assessment of reading skills, not only of measuring Oral Reading Fluency, but also Letter Naming Fluency, Initial Sound Fluency, Phonemic Segmentation Fluency and Nonsense Word Fluency. With DIBELS, problem areas can be identified and specific teaching interventions can be initiated to target specific reading difficulties. This strength makes DIBELS the better instrument for identifying reading difficulties early.

STEEP, on the other hand, measures math, writing and behavior in addition to oral reading fluency, making this instrument attractive to educators who are looking for an instrument that is more comprehensive in terms of overall curriculum. In terms of reading assessment, STEEP might be best used in later grades after specific reading difficulties have been identified by DIBELS, and specific, appropriate strategies have been developed for the improvement of reading skills.

In any case, the use of curriculum-based measures such as DIBELS and STEEP is highly desirable. These measures identify children with reading problems early, which is crucial in enabling these children to become literate. Early intervention is paramount to provide effective reading instruction for students who are at risk for reading failure. Also, these measures prevent unnecessary special education referral. The use of curriculum based measurement as a school strategy is in the best interest of children, and is also fiscally responsible.

Figure 1.

Correlations

Correlations First Grade

		DIBELS	STEEP
DIBELS	Pearson Correlation	1	.858
	Sig. (2-tailed)	.	.000
	N	127	127
STEEP	Pearson Correlation	.858	1
	Sig. (2-tailed)	.000	.
	N	127	127

** Correlation is significant at the 0.01 level (2-tailed).

Correlations Second Grade

		DIBELS	STEEP
DIBELS	Pearson Correlation	1	.922
	Sig. (2-tailed)	.	.000
	N	112	112
STEEP	Pearson Correlation	.922	1
	Sig. (2-tailed)	.000	.
	N	112	112

** Correlation is significant at the 0.01 level (2-tailed).

Correlations Third Grade

		DIBELS	STEEP
DIBELS	Pearson Correlation	1	.910
	Sig. (2-tailed)	.	.000
	N	131	131
STEEP	Pearson Correlation	.910	1
	Sig. (2-tailed)	.000	.
	N	131	131

** Correlation is significant at the 0.01 level (2-tailed).

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