Using Systematic Instruction to Teach Decoding Skills to Middle School Students with Moderate Intellectual Disabilities

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Abstract: The purpose of this study was to determine the effectiveness of providing middle school students with moderate intellectual disabilities with letter-sound correspondence instruction using the Corrective Reading Program. The study also examined the generalization of decoding skills to untaught functional and community words. Participants were three male students ages 12, 14, and 15 who were taught using the Level A of Corrective Reading Program. Sixty-five lessons each lasting 45-55 minutes were provided three days a week over a six month period. Prior to receiving instruction, students demonstrated minimal decoding skills. Upon completion of the study, students were able to (a) identify letter sound correspondences, (b) sound out words, (c) blend sounds to read words, (d) decode irregularly spelled words, (e) read sentences, and (f) read short passages at the second grade level. Results are discussed in terms of the decoding, fluency, and sight word skills of this population of students.

The National Reading Panel (NRP) (2000) identified the five “big ideas” in reading as phonological awareness, alphabetic principle, fluency, vocabulary knowledge, and comprehension. Phonological awareness is the ability to perceive spoken words as a sequence of sounds (phonemes) and to manipulate sounds in words. Alphabetic principle is the ability to understand that letters (graphemes) represent sounds and that words are comprised of letter strings and sound patterns. Fluency is the ability to read text quickly and accurately with proper expression. Vocabulary knowledge is the ability to understand (receptive) and use (expressive) words to form meaning in oral and textual tasks. Comprehension is the ability to orchestrate complex cognitive and meta-cognitive processes to gaining meaning from text.

While most students acquire language in a natural, developmental manner, their ability to acquire basic reading skills is not a natural process (Greene, 1998; Lyon, 1999; Moats, 2000). Teachers encounter students who come to school with environmental, experiential, and individual differences (Lyon). More importantly, the total act of reading is affected if students are weak in just one reading skill (Chall, Jacobs, & Baldwin, 1991). For example, weak word recognition skills negatively affect a student’s ability to read in an effortless manner. Lack of fluent reading tends to lower a student’s motivation to continue to read. Limited reading practice limits a student’s vocabulary knowledge and comprehension that results in poor academic achievement and limited literacy skills.

Stanovich (1986) borrowed the biblical concept, “Matthew effects,” that describes a rich-get-richer and poor-get-poorer phenomenon when applied to reading. In other words, those students who have limited access to the meaning of printed words fall behind their peers with average to above reading skills, resulting in an increasingly widening perfor-
mance gap as they progress through school and life. Thus, reading holds cognitive consequences that limit one’s quality of life. Students at-risk for learning tend to differ from their average-achieving peers in the areas of language processing, memory, learning strategies, and vocabulary (Kameenui & Carnine, 1998). Students with moderate intellectual disabilities (MOID) often have deficits in all three skills needed for effective reading.

**Reading Instruction and Students with MOID**

The primary research-based methods of reading instruction used with students with moderate intellectual disabilities are various sight word approaches (Barudin & Hourcade, 1990; Browder, Hines, McCarthy, & Fees, 1984; Browder & Lalli, 1991; Browder & Xin, 1998, Connors, 1992; Dorry & Zeaman, 1973; Katims, 2000; Koury & Browder, 1986; Worrall & Singh, 1983). The three methods of sight word instruction reported most are time delay, picture integration, and picture fading (Browder & Lalli; Browder & Xin). These methods employ either visual or verbal prompts, as prereponse prompting procedures. Time delay inserts a delay before providing the student a prompt for responding. Considerable evidence suggests time delay as one of the most effective and efficient instructional strategies available to teach sight words to individuals with moderate and severe intellectual disabilities (Ault, Wolery, Doyle, & Gast, 1989). Worrall and Singh investigated a picture integration method in which a picture cue within the word was gradually faded, while the boldness of the word’s letters were gradually increased as instruction progressed. This resulted in a high rate of word recognition for students with MOID, however, no more than five words per week were learned. Dorry and Zeaman used a picture-fading technique that paired pictures with written words. These pictures were gradually faded while the words remained at a constant intensity.

Researchers have pointed to several limitations resulting from the use of sight word instruction. The limitation most often identified is that while sight word approaches prove successful in building a reading vocabulary, they are not successful at incidentally teaching word-analysis skills (Barudin & Hourcade, 1990; Browder & Xin, 1998; Connors, 1992). Therefore, students are not provided with skills to decode untaught words they encounter in functional reading contexts. Sight word approaches require that student receive direct instruction on each word. It is not possible to identify and teach all possible words a student may encounter, therefore, a question of practically of sight word instruction arises. This may limit the size of a student’s potential reading vocabulary, limit their range of functional reading skills, and may limit the number of environments within which they may operate (Flores, Shippen, Alberto, & Crowe, 2004; Nietupski, Williams, & York, 1979).

Aaron, Joshi, Ayotollah, Ellsberry, Henderson, & Lindsey (1999) suggest that sight word reading instruction is likely to be more successful if decoding skills are established first. Their study looked at general education students and students with identified reading disabilities. They demonstrated that decoding and sight-word reading represent two phases of the development of word recognition skills, with the latter being built of the foundation of the decoding skills. A number of researchers have proposed that students with MOID can develop generalized reading skills such as letter-sound correspondence, phonic decoding, and contextualized reading (Bracey, Maggs, & Morath, 1975; Nietupski et al., 1979); however few studies have been conducted on this topic.

Bracey et al. (1975) studied the effectiveness of Distar Reading (Engelmann & Bruner, 1969), a direct instruction program designed to teach phonetic decoding, with students with MOID over the period of a year. The students demonstrated significant gains in three areas (a) identifying the sounds of letters and digraphs, (b) reading by blending sounds, and (d) spelling words by using sounds. They concluded that students with MOID could learn to read using this task-analyzed, structured, phonetic approach. Nietupski et al. (1979) instituted a program using explicit instruction to teach letter-sound correspondence. This program used aspects of the Distar program. The program separated the word analysis skill into the subskills of letter-sound correspondence for consonants, letter-sound correspondence for vowels, vowel and consonant combinations, and consonant-vowel-consonant combinations.
The skills were taught through a variety of individual, class, and game formats. These authors found that students with MOID could systematically decode words through the use of explicit instruction. The students also transferred their decoding skills from isolated activities to phonetically based readers.

Gersten and Maggs (as cited in Conners, 1992) studied the effects of the Distar Program on reading skills of students with MOID. The phonics based program was effective in teaching reading to this population. However, phonics instruction was part of the broader reading and language based program. Gersten, Woodward, and Darch (1986) pointed out that there is sufficient evidence that explicit instruction is a highly successful approach in instruction with students with a range of abilities. However, few studies have investigated explicit instruction in letter-sound correspondence, with students with MOID.

Joseph and McCachran (2003) studied the effectiveness of a word study phonics technique on word recognition, pseudoword recognition, phonological awareness, and spelling. They compared the results of the technique between a group of students with moderate to mild intellectual disabilities and a group of struggling young readers not identified as having disabilities. There were no significant differences between the groups on any of the measures. There was variability in performance within each group, especially within the group of students with intellectual disabilities. This investigation demonstrated that children with intellectual disabilities can benefit from a phonics approach and can achieve literacy performance levels comparable to children without disabilities. This study strengthens the idea that children with moderate intellectual disabilities should be provided word recognition approaches rather than exclusively being taught with sight word instruction.

Research to date regarding the systematic instruction of letter-sound correspondence for students with intellectual disabilities through the Corrective Reading Program (Engelmann, Becker, Hanner, & Johnson, 1980), which is one of the current versions of the Distar program, is limited. Polloway, Epstein, Polloway, Patton, and Ball (1986) investigated the effectiveness of the Corrective Reading Program for students identified as having mild intellectual disabilities and learning disabilities. The gains in both reading recognition and, incidentally, in reading comprehension were substantial in both groups. The investigators also showed that the students with learning disabilities improved at a greater rate than the students with mild intellectual disabilities. These investigators also suggested that it is reasonable to assume that the students with mild intellectual disabilities may require a more slowly paced presentation of Corrective Reading to maximize their progress.

Flores et al. (2004) used a modified version of Corrective Reading Decoding, Level A (1988) as an alternative to sight word instruction with elementary students with MOID. Five of the six students in this study acquired letter-sound correspondence and discrimination, blending of sounds, and systematic decoding of consonant-vowel-consonant words including the sounds taught.

The purpose of this study was to conduct an investigation to substantiate the efficacy of explicit instruction in letter-sound correspondence for middle school students with MOID and to extend the research on the Corrective Reading Program to students with this level of abilities. Additionally, the study included an investigation of the generalization of decoding skills to previously untaught functional and community words.

Method

Participants and Setting

Participants were three males, ages 12 to 15, served in a modified self-contained setting for students with MOID in a public middle school in a large southeastern city. See Table 1 for participant demographic information. Students were chosen based on teacher recommendation and their performance on a teacher-designed placement test. Two students were identified as having MOID. One student was identified as having Traumatic Brain Injury and received special education services in the program for MOID.

Students’ cognitive ability (IQ) scores ranged from 46 to 55 and their adaptive behavior scores ranged from 38 to 57. Prior to
the reading intervention, the students received sight-word reading instruction using the Edmark Reading Program (1992) and teacher-designed instruction in sight words, including community words and the Dolch word list. Prior to this instruction, the three students had not received letter-sound correspondence instruction, and therefore, no traditional reading inventory was done. However, Joseph was able to identify 32 of the first 100 Dolch Sight Words prior to the intervention, Norbert was able to identify 49 of the first 100 Dolch Sight Words, and Sean identified 123 of 160 Edmark functional words. Sean used the Edmark program since his previous teacher selected to use it instead of the Dolch Sight Word list as indicated on their respective IEP. Sight word instruction was discontinued during the study.

Instructional Materials and Procedures

Materials for instruction were the Corrective Reading Program, Decoding A (Engelmann, Carnine, & Johnson, 1988). This program was chosen over other Direct Instruction programs such as Reading Mastery I (Engelmann & Bruner, 1997) because it specifically addresses decoding skills, rather than developmental reading skills. The Corrective Reading Program is a core reading curriculum that provides sequential decoding instruction for older students who have not mastered basic reading skills. There are four levels in the decoding series (A, B1, B2, C). Typically, Decoding A and B1, with a total of 130 lessons, are taught in a year period. Level A consists of 65 lessons. Level A teaches basic word recognition skills such as blending, rhyming, sounding out, and word and sentence reading. See Table 2 for an overview of letter-sound correspondences taught in Corrective Reading Decoding, Level A.

The program provides the teacher with a detailed script that specifies what the teacher says and does. Scripts are used to increase instructional effectiveness and efficiency by providing teachers with uniform wording and examples. All lessons build on each other for cumulative skill development. Once a skill or strategy is taught, subsequent lessons develop those skills or strategies through controlled practice. Each daily lesson takes approximately 35-45 minutes of teacher-directed work and 10-15 minutes of independent student applications. Mastery Tests or Individual Reading Checkouts are provided in lessons. Each test or checkout is a criterion-referenced performance measure of student reading behavior that provides teachers with very detailed data individual student progress. The program provides teachers with a data management system where students earn points for their daily performance that can be used for providing grades and documenting reading progress.

Lessons are divided into four parts: word-attack skills, group reading, individual reading checkouts, and workbook exercises. Word-attack skills involve approximately 10 minutes of students pronouncing words, identifying letter or letter combination sounds. Students earn points for this portion of the lesson in they meet the error limit within a designated time period usually one minute. Group reading involves 15-20 minutes of students reading orally several reading sections. Students earn

<table>
<thead>
<tr>
<th>Student</th>
<th>Exceptionality</th>
<th>Age</th>
<th>IQ</th>
<th>Adaptive Behavior</th>
</tr>
</thead>
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<tr>
<td>Joseph</td>
<td>MOID</td>
<td>12</td>
<td>WISC III*</td>
<td>46</td>
</tr>
<tr>
<td>Norbert</td>
<td>MOID Traumatic</td>
<td>14</td>
<td>DAS**</td>
<td>49</td>
</tr>
<tr>
<td>Sean</td>
<td>Brain Injury/MOID</td>
<td>15</td>
<td>SB:FE***</td>
<td>55</td>
</tr>
</tbody>
</table>

* Wechsler Intelligence Scale for Children III
** Differential Abilities Scales
*** Stanford Binet Fourth Edition
**** Adaptive Behavior Assessment System

TABLE 1
Description of Participants
points for each section read within a specified reading error and time limit. Students are asked a comprehension questions for passages read within the error and time limit. Individual reading checkouts involves 10 minutes of students reading in pairs the current lesson and the previous lesson reading passage. Students earn points when the error and time limit is met. Workbook exercises involve 10 minutes of instruction that is either teacher directed or independent. Workbook exercises provide students with an opportunity to practice skills just taught. Again, students earn points for meeting their error and time limits.

Students were given an extension of time during the reading checkouts. Therefore, the point system was not used because of the necessity to extend of time for students on reading fluency checkouts within each lesson that required fluency measures. Except for the extension of time and not using the program’s point system, all other components of the program were taught as designed in the Teacher’s Guide. Initially, plans were made to modify the presentation pace and workbook page appearance. These modifications were not necessary.

**TABLE 2**

 Scope and Sequence of letter-sound correspondence taught in Corrective Reading

<table>
<thead>
<tr>
<th>Sound</th>
<th>As In</th>
<th>Lesson</th>
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<tbody>
<tr>
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<td>mat</td>
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<td>a</td>
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<td>z</td>
<td>zoo</td>
<td>59</td>
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<tr>
<td>qu</td>
<td>quick</td>
<td>62</td>
</tr>
</tbody>
</table>

**Research Design**

A pretest-posttest design with program specific criterion-referenced performance measures were used in this study. The pretest posttest dependent measures consisted of the Dolch or Edmark sight word list (Dolch, 1955; Edmark Reading Program, 1992). The other four dependent measures yielded from the criterion-referenced performance measures were (a) oral letter-sound correspondence, (b) written letter-sound correspondence, (c) word recognition, and (d) reading fluency of controlled connected text. The independent variable was a modified version of Corrective Reading Decoding, Level A (Engelmann et al., 1988).

**Intervention**

The first author delivered the reading instruction during intervention. She is formally trained in implementation of Corrective Reading Decoding A and is a trained trainer of the program. Instructional procedures included: (a) presentation of materials as designed; (b) following the program script; (c) correct modeling of letter-sounds and sounding out of words; (d) following the correction procedure; and (e) recording student data.

The lesson format in Level A requires students to produce oral letter sounds, written letter sounds, and perform word reading task. Lesson 24 to 29 requires students to read a set of unrelated sentences. Lesson 29-65 requires students to read a set of related sentences in passage form. Lessons consisted of (a) modeling of letter sounds, (b) independent practice saying each sound (with data collection), (c) repeating words with similar sounds, (d) identifying the middle sound in words, and (e) sounding words out and then saying them fast. The workbook portion of the lesson consisted of students (a) writing the sounds dictated by the teacher (with data collection), (b) writing dictated words, (c) supplying letters to form dictated words, (d) checkouts (reading words, then sentences and eventually short stories with data collection), (e) matching completion, and (f) circling sounds. Criterion for moving onto the next lesson was making no more than one error during word or story reading during the checkout step.
Instruction was delivered during the school day at times agreeable to the students’ three teachers. Sessions were held three days a week for 45-55 minutes per session. Earlier lessons took less time to present and so two were conducted each day, one in the morning and one in the afternoon. As the time necessary to present the lesson increased, sessions consisted of one lesson a day, usually done in the morning. Occasionally, a lesson was completed in the afternoon session because a student had to leave for another activity before the lesson could be completed in the morning.

**Data Collection**

**Baseline.** The standard program placement test of *Corrective Reading* requires the ability to read connected text. The standard program placement test was attempted, but not used because participants were unable to perform the tasks required of the placement test. They could not read the connected text and after three minutes, testing was stopped. Decoding Level A was chosen because it is essentially for the nonreader. Prior to instruction, students were pre-tested using a teacher-designed placement test (see Table 3) that consisted of identifying the letter names, sounds, or words that begin with a given letter. The teacher-made placement test was used because it focused on more basic reading skills (letter-sound correspondence, letter identification) as compared to the program placement test.

Data collected during daily lessons were (a) percent correct saying the sounds aloud; (b) percent correct writing dictated sounds; (c) percent correct of reading the words, sentences, or stories aloud during checkout, and (d) words read per minute. Data collected from in program mastery tests were (a) percent correct words read, and (b) reading fluency.

Supplemental Program Mastery Tests, not built into the daily lessons, were also administered. Mastery objectives in the areas of dictation, word completion, workbook skills, word identification, and sentence reading were evaluated. If students failed to meet criteria on the Supplemental Program Mastery Tests, specific lessons were identified to be reviewed by the students in order to demonstrate mastery. The Supplemental Program Mastery Tests consists of three tests. Test 1 and Test 2 included a timed, or fluency measure criterion. Test 3 included an oral comprehension criterion. Students were administered Test 1 following Lesson 20, Test 2 following Lesson 45, and Test 3 following Lesson 65.

Following completion of the program, each student was given a post-test of either the Dolch Sight Words or the Edmark functional words, depending on which was administered as the pretest. The *Corrective Reading Program* Placement test was also re-administered following completion of the program. The *Corrective Reading* placement test was re-administered following the summer break to determine if students maintained the decoding skills taught in the program the previous school year.

**Results**

All three students completed Level A of the *Corrective Reading Decoding Program*. The delivery of the program took 65 instructional sessions over a six month period. Instructional sessions were held 2 to 3 times per week. At the completion of Level A, students demonstrate the following skills (a) identifying letter sound correspondence, (b) sounding out words, (c) blending sounds to read words, (d) decoding irregularly spelled words, (e) reading sentences, and (f) reading short passages at approximately the second grade level.

Error analysis was conducted to determine trends within the data across attempts to produce (a) oral letter-sound correspondence, (b) written letter-sound correspondence, (c) word recognition, and (d) reading fluency of the text. Mean percent correct was calculated for each student in each of the areas above. All students performed at 97% correct or above in oral letter sound correspondence, written letter sound correspondence, and word recognition. Table 4 presents student performance in these three areas. Fluency was measured by the four in program mastery tests administered after the completion lessons 50, 55, 60, and 65, respectively. Fluency performance was measured through a combination of reading rate and reading accuracy. On two of the four measures of reading fluency all participants
## TABLE 3

**Teacher-Made Placement Test**

<table>
<thead>
<tr>
<th>Name</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade</td>
<td>Age</td>
</tr>
</tbody>
</table>

**Current Reading Program**

**Past Reading Program/Experience**

Indicate student’s skill level by circling the skill if the student correctly demonstrates the skill or writing an X over the skill name if the student does not demonstrate the skill.

1. a  
2. m  
3. t  
4. s  
5. i  
6. f  
7. d  
8. r  
9. o  
10. g  
11. l  
12. h  
13. u  
14. c  
15. b  
16. n  
17. k  
18. v  
19. e  
20. w  
21. j  
22. p  
23. y  

Circle the letter that the student points to. Tell the student the sound in bold print and ask the student to point to that sound in the array. Example: “The sound is aaaa, point to it.”

24. a  
25. m  
26. t  
27. s  
28. i  
29. f  
30. d  
31. r  
32. o  
33. g  
34. l  
35. h  
36. u  
37. c  
38. b  
39. k  
40. v  
41. e  
42. w  
43. j  
44. p  
45. j  
46. y
reached mastery. The reason all students did not reach mastery on the other two reading fluency tests was due to reading rate not reading accuracy. Sean exceeded the one minute reading rate goal on the third and fourth in program mastery tests by 10 and 19 seconds, respectively. Joseph exceeded the one minute reading rate goal on the third and fourth in program mastery tests by 15 and 17 seconds, respectively. Norbert exceeded the one minute reading rate goal on the third and fourth in program mastery tests by 10 seconds on both.

Students’ errors typically were errors on new sounds learned during the first few lessons after these sounds were introduced. They would misidentify the new sound. This would either be by saying an incorrect sound when the investigator pointed to a letter, writing the wrong letter when dictated a sound, or misreading a word by using the wrong sound or sounds. After two to three lessons of practicing the new sound, errors were diminished.

A post-test was administered on sight word recognition following completion of the program, as a measure of generalization. The students generalized the decoding skills learned to unknown functional and community sight words. Joseph and Norbert read all of the first 100 Dolch Sight Words. Sean read 155 of 160 Edmark functional words. The students used the decoding skills learned to identify untaught words from a list of sight words. See Table 5 for percentage of sight word gain scores.

### Follow-up Data

The Corrective Reading Program Placement test was readministered to the three students approximately nine weeks after completion of the program. This was the test that the students could not complete initially, because of their inability to read connected text. Students were able to read both parts administered. On part 1, the timed section, students read with between four and ten errors. None of the students read the passage within the two minutes, but took from two minutes, fifteen seconds to three minutes and forty seconds. Students’ fluency increased from zero words correct per minute on the pre-placement test to 15 words correct per minute for Sean, 46 words correct per minute for Joseph, and 39 words correct per minute for Norbert. All three students would have placed into Level B1, Lesson 1 with these results.

### Inter-observer Reliability and Fidelity Procedures

An independent observer conducted direct observation for measurement of inter-observer reliability and treatment integrity. Inter-observer reliability was measured by comparing the teacher and independent observer’s data sheets for twenty-five percent of the treatment sessions. Both occurrence and non-occurrence reliability were calculated by adding the total number of observer agreements and dividing by the total number of observer agreements and disagreements. Inter-observer agreement was 100% for both occurrence and non-occurrence.

Treatment fidelity was measured using a checklist of instructional and data collection procedures. Forty percent of sessions were

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### TABLE 4

<table>
<thead>
<tr>
<th>Student</th>
<th>Oral Letter Sounds</th>
<th>Written Letter Sounds</th>
<th>Word Reading</th>
</tr>
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<tbody>
<tr>
<td>Sean</td>
<td>97</td>
<td>97</td>
<td>99</td>
</tr>
<tr>
<td>Joseph</td>
<td>99</td>
<td>99</td>
<td>99</td>
</tr>
<tr>
<td>Norbert</td>
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### TABLE 5

<table>
<thead>
<tr>
<th>Number of words</th>
<th>Number of words</th>
<th>Percent of Gain</th>
</tr>
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<tbody>
<tr>
<td>Pre-Test</td>
<td>Post-Test</td>
<td></td>
</tr>
<tr>
<td>Sean*</td>
<td>123</td>
<td>155</td>
</tr>
<tr>
<td>Joseph**</td>
<td>32</td>
<td>100</td>
</tr>
<tr>
<td>Norbert**</td>
<td>49</td>
<td>100</td>
</tr>
</tbody>
</table>

* Edmark Functional Word List
** Dolch Sight Word List
checked for treatment fidelity through direct observation. Treatment fidelity was calculated by dividing number of procedural items carried out correctly by the total number of procedural items and multiplying by 100. The treatment was carried out with 100% accuracy.

Discussion

Results of this study demonstrate that students identified as functioning in the range of MOID are capable of learning word analysis skills such as (a) identifying letter sound correspondence, (b) sounding out words, (c) blending sounds to read words, (d) decoding irregularly spelled words, (e) reading sentences, and (f) reading short passages at approximately the second grade level. These results substantiate the efficacy of explicit instruction in letter-sound correspondence for middle school students with MOID, and extend the research with the Corrective Reading Program to students at this level of functioning. The finding that students with MOID are capable of learning word attack skills is consistent with previous studies (Conners, 1992; Katsims, 2000), and confirms that students with intellectual disabilities can benefit from phonics instruction (Joseph & McCachran, 2003). These results extend the research regarding the systematic instruction of letter-sound correspondence through the Corrective Reading Program to students with MOID. This research was previously limited to students with limited English, learning disabilities, emotional/behavioral disabilities, and mild intellectual disabilities. Additionally, this finding is similar to other research using DI with students with a range of abilities (Flores et al., 2004; Gersten et al., 1986; Polloway et al., 1986).

This investigation did not require accommodations to the pacing of the program for the students, with the exception of extending the allowable time on measures of reading fluency. Student fluency when reading text was usually within the range allowed by the program during lessons in the middle of the program. However, as passages became longer, fluency seemed to be affected. In the final lessons, the story is to be read in one minute or less. It was not unusual for the students to require 70-75 seconds to read these passages. As reading fluency is highly correlated with comprehension (National Reading Panel, 2000) more research is needed in determining the most effective instructional strategies for building reading fluency skills with this population of students. In this study we did not have a measure that indicates whether the fluency lag noted in these students affected their comprehension. The discrepancy between the time required by the program and the additional 10 to 15 seconds required by the students may not have an affect on their comprehension. Also, we do not know if this lag would maintain, increase or decrease as students progress in the program. As the program progress into the next level the passages get longer. We need to confirm the nature of the relationship between length of text and degree of fluency lag and their affect on comprehension for these students. We also need research that exams whether fluency rate requirements differ for text in the form of paragraphs and text in the form of informational or directive writing that may be necessary to successfully carry out community tasks.

One frequently noted limitation of sight-word instruction is that students do not apply sight word reading skills to untaught words (Barudin & Hourcade, 1990). Sight word reading alone limits students to reading a finite list of words and phrases. The students in this study effectively used the decoding skills learned to identify previously unknown functional words. This transferability of decoding skills should increase students’ ability to function independently in the community. This raises several questions concerning the delivery of reading instruction: Can we confirm the idea that sight word instruction is likely to be more successful if decoding skills are established first, (Aaron et al., 1999)? What is the necessary combination of decoding skills and sight word instruction that will increase students’ functional reading skills in the community as demonstrated by successfully engaging in community tasks? What is the appropriate mix and sequence of decoding skills and sight words skills? What are the essential decoding skills necessary to encounter successfully untaught words in the community? Does the naturally occurring format of reading materials and the community context within which they appear have an effect on the decoding skills?
that are needed? Finally, will the combined use of decoding skills and sight word instruction increase the number of words the student can read, as many functional words or words in the community follow regular letter-sound patterns? Decoding skills may decrease the time necessary for learning functional words. This should allow the opportunity for these students to learn more sight words, words that may be irregularly spelled.

References


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