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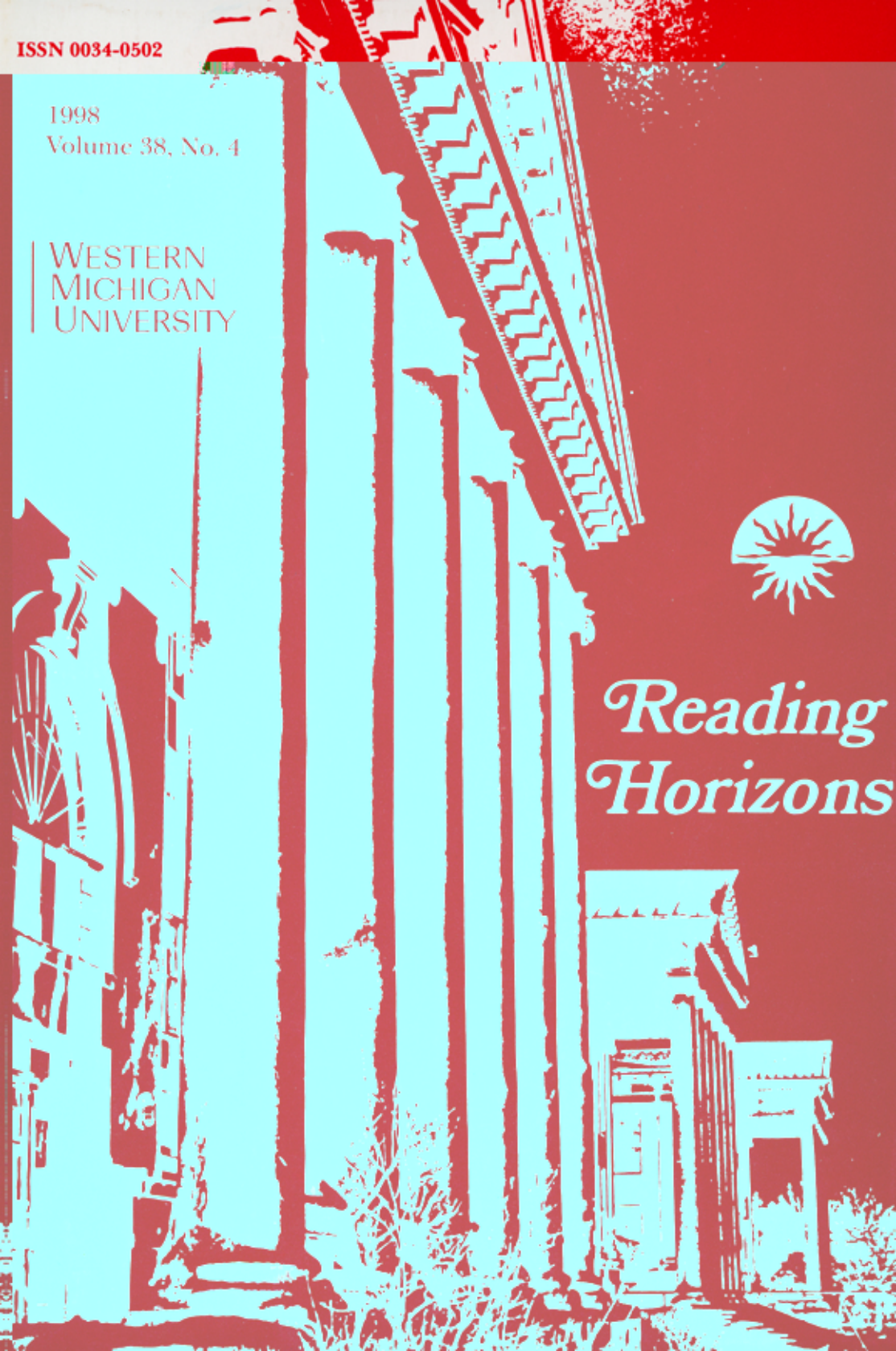
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Reading Horizons





READING HORIZONS:
A Journal of Literacy and Language Arts

Editors: Karen F. Thomas & Paul T. Wilson
Executive Assistant: Susan Standish

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Increasing Students' Achievement and Interest in Reading

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ABSTRACT

Teachers of literacy have two major goals; to help their students become able readers and to help instill in their students the desire to read. This article reports a one year study in a fourth grade classroom to help students in both areas. The reading program in this fourth grade classroom included silent reading time, choices of reading materials, sharing of literature, and appropriate adult modeling of reading. Results included increases in reading rates, comprehension, vocabulary, and amount of reading accomplished by the students. Recommendations for teachers are provided based on findings of the study.

Aliteracy, having the ability to read but lacking the motivation, is a widespread concern in the United States. This problem is found even in elementary schools where negative attitudes toward reading begin very early in children's lives. In the report *Becoming a Nation of Readers* (Anderson, Heibert, Scott, and Wilkinson, 1985), the Commission on Reading reports that our nation's fifth graders rarely read for pleasure.

50% of the children read books for an average of four minutes per day or less, 30% read two minutes per day or less, and fully 10% never reported reading any book on any day. For the majority of the children, reading from books occupied 1% of their free time, or less. (p. 77)

Researchers express concerns about reading attitudes in our classrooms where a general lack of interest prevails. They point out that those considered hesitant readers are not just the poor readers, but also include many capable readers (Clary, 1991; Turner, 1992).

Other diversions compete for the interests of children; unfortunately, reading appears to be low on the list of activities children choose to do in their spare time.

A major goal in the teaching of reading is to develop in children the desire to read so they will become life-long readers. Trelease (1989) elaborates on this ideal:

At a time when 80% of the books published for adults in the U.S. are financial failures and TV Guide is the best selling newsstand weekly periodical, when 60% of our prison population has severe reading problems and 80% of our 21 year olds cannot comprehend a college textbook, it is time to stop fooling ourselves. Teaching children how to read is not enough; we must also teach them to want to read. (p. 205)

Although instruction in reading strategies and skills is important, teachers must remember to provide time for students to enjoy good books and have positive reading experiences. This may be especially crucial for those readers who experience difficulty in learning to read.

Motivated readers, those who participate in self-initiated reading, become better readers as a result of this increased exposure to literature (Allington, 1977; Anderson, Wilson, and Fielding, 1988). Gambrell, Palmer, Codling, and Mazzoni (1996) maintain that highly motivated readers are in control of their own literacy development:

Students who believe they are capable and competent readers are more likely to outperform those who do not hold such beliefs. In addition, students who perceive reading as valuable and important and who have personally relevant reasons for reading will engage in reading in a more planned and effortful manner. (p. 518)

The goal of teaching reading is to develop efficient and self-motivated readers. Therefore, educators should promote positive reading attitudes through enjoyable reading experiences. Realizing that when children spend time reading their ability to read improves, teachers need to find ways to encourage children to read more in school and at home. Leading educators (Allington, 1977; Anderson, et al., 1985; McCracken & McCracken, 1979; Routman, 1991; Trelease, 1989) have suggested four methods that are particularly effective in inviting hesitant readers into the world of books: allowing time for silent reading, offering a choice of reading materials, sharing of literature read with and by children, and providing appropriate adult modeling of reading.

IMPLEMENTING A PROGRAM IN THE CLASSROOM

These four methods of encouraging students to read are simple, inexpensive strategies that elementary teachers can use to help develop students' desire to read. To examine possible effects of these strategies, we put them into practice in a fourth grade classroom. Fourth graders enrolled in a traditional-schedule elementary school in the Rocky Mountain region were selected for participation because they were students in the classroom of one of the authors. Since this was a stable school population, these students remained in the same classroom throughout the school year.

Description of the Program

The language arts program in this fourth grade class consisted of approximately two hours daily. This time included instruction in all of the language arts: reading, writing, spelling, and handwriting. The first major block of time focused on reading and the second on writing.

For the first 10 to 15 minutes of the school day, the classroom teacher discussed literature of various sorts with the class. At times the sharing consisted of the teacher reading a picture book or doing a book talk on a chapter book. At other times, the teacher read newspaper articles or gave examples of his own writing to the students. Following this teacher sharing, he presented a mini-lesson on a topic related to literature study. Sample topics included vocabulary development activities (e.g., figurative language, synonyms, antonyms), word identification topics (e.g., compound words, prefixes, word patterns), comprehension development (e.g., story mapping, predicting outcomes, main ideas and details) and reference material use (e.g., use of indexes, dictionaries, graphs and charts). Texts from the district-adopted basal reading program were used for paired reading. Paired reading was done in various ways: the two students read the text simultaneously or one student in the pair read orally from one of the selections while the other student listened. Occasionally during this time, the class engaged in repeated reading (Samuels, 1979). Students individually read and re-read the same selection, trying to reach a faster rate than before. This activity was designed to increase not only rate of reading, but also students' sight vocabulary and comprehension.

Fifteen minutes was then spent on literature study each day. The teacher had 33 classroom sets of literature for use in literature study. At the beginning of the school year, the class as a whole selected a title that they wanted to read. Students read and discussed the book together as a whole class, with the teacher modeling strategies that would later become independent for the students, allowing for small group and partner reading of books. As the year progressed,

small groups or partners chose books to read and discuss together. They normally culminated their reading with the creation of a final project that was shared with the rest of the class. The final 30 minutes of this time block was spent in sustained silent reading (SSR) where students selected books to read independently. At the beginning of the year, some students found it difficult to read for the entire 30 minutes, but most students consistently used their SSR time well.

After this reading period, the students had a block of time focused on writing development. The first ten to fifteen minutes was spent in spelling instruction. The teacher created a spelling program that focused on students practicing words they frequently misspelled during their writing, as well as high frequency words. After this brief spelling period, the students completed Daily Oral Language activities, including sentence building, dialogue and sentence expansion activities. The teacher then presented a short ten minute mini-lesson that covered such writing topics as correspondence or letter writing, persuasive language, stylistic devices (such as, imagery, personification, and alliteration), propaganda devices, sensory writing, life stories, collaborative writing (the whole class creates a story following guidelines of the writing process), partner editing, alternate writing (each student begins a story, then passes his/her unfinished pieces to another student who continues the story), script writing, sentence building, alliteration, descriptive writing, and editing of one's writing. The topics for these mini-lessons came from the teacher's work with the students and his observations of their needs.

Following the mini-lesson, students wrote in their journals for approximately 5 minutes. Instead of assigning a writing topic for their journals, the teacher allowed them to write on any topic they wished. The journals were strictly for the students with no teacher or peer response. Journal writing was followed by about 30 minutes of sustained silent writing (SSW). Students generally wrote about topics of their own choice and completed their work over a period of time. During this time students not only composed, but also engaged in all aspects of the writing process: topic selection, drafting, conferencing, revising, editing, and publishing.

As referred to previously, the research literature suggests that four features in a classroom could contribute to increased motivation to read for elementary grade students. Each of these four strategies — providing time for reading, allowing students choice in what they read, sharing literature, and adult modeling of reading — was included in the program outlined above.

PURPOSE OF THE STUDY

As reflected in the literature, four classroom strategies are recommended to increase motivation to read among elementary students. We implemented these four strategies to examine their possible effects

on the two major purposes for reading instruction: first, the development of students' ability to read, and second, the development of students' motivation to read. We wanted to explore the following questions: 1) Does implementation of these four practices lead to increases in students' scores on reading achievement tests? 2) Do students who are consistently exposed to these four practices increase their reading fluency and accuracy? 3) Do they read more? What kinds of books do they read?

DATA COLLECTION

To measure changes in students' interest and reading achievement, we used both formal and informal measures. During the first two weeks of the school year, the Gates-MacGinitie Reading Test, Level D, Form 1 (MacGinitie and MacGinitie, 1989) was administered to all students to measure their reading achievement. This test measures reading achievement by grade level and includes both comprehension and vocabulary subtests.

We also prepared an informal oral reading test, adapted from Marie Clay's Running Record guidelines (Clay, 1994). This informal test was used to assess each student's oral reading, including fluency and accuracy of reading. A one-page text was selected from a fourth grade basal reader not used for reading instruction during that school year. Each student silently read the passage one time before the test to become familiar with its content. During the evaluation, the student read from the text orally for one minute. What the student read orally was scripted by the teacher, so that all deviations from the text were recorded. Scores for oral reading accuracy were based on the percentage of words read correctly. A simplified form of oral miscue analysis was used to determine which miscues (deviations from the text) interfered with the student's comprehension of the passage. For oral reading fluency, we recorded the number of words per minute students read.

We collected many other forms of data, including records of books read by students during their silent reading period, teacher anecdotal records of classroom observations, and teacher records of books read by him to the students to identify changes in students' interest and participation in reading.

RESULTS

Results are reported in several ways. First, results of teacher and student records are reported to provide an indication of students' interest in reading. Second, whole class results of the Gates-MacGinitie Test of reading achievement (comprehension and vocabulary) and the oral reading tests that provided fluency and accuracy scores are reported. Third, comparisons are made of students' achievement on the

formal tests from the perspectives of gender and reading ability differences. Students from the upper, middle, and lower thirds of the class, as measured by the Gates-MacGinitie test, are compared with one another. Finally, the influence of adult modeling on student reading practices are reported.

Whole Class Results of Teacher and Student Records

Student reading records showed that during the school year of the study the class of 26 students read over 2,100 books in a seven-month period, from the beginning of school until the end of March. The average number of books read was 81 books per student; the girls averaged 86 books and the boys 72 books. Several students read between 200-250 books, while others read only 25-30 books. Approximately 60% of the books read were picture books, while the other 40% were chapter books.

Classroom observations at the beginning of the school year showed that a majority of the students read eagerly during sustained silent reading, while only a few students resisted reading. For example, during the first week of school, six students (five boys and one girl) were easily distracted and exhibited behavioral problems and had to be reminded to read. They sometimes pretended to read by merely flipping pages and they frequently searched the bookshelves for a book instead of reading at their seats. However, three months later we observed very little reluctance toward reading on the part of any student, including the six who were originally resistant.

Each week, the teacher provided new collections of reading materials. With each new collection of books, the students showed increased excitement towards reading. The teacher provided a wide selection of books from the city, school, and classroom libraries. These three resources provided students with nearly 2000 books from which to choose for self-selected reading. Approximately 50 books were checked out from the city library each month for use in the classroom. School library records showed that over 700 books were checked out for student use during a seven-month period, an average of over 100 books each month. The classroom library consisted of 400-500 books, including both chapter and picture books, as well as 33 classroom sets of children's books. These books were purchased with resources normally spent on textbooks.

Recorded teacher observations showed a broadening of reading interest among the students. Interest in reading increased within the first few months of school, even for the most hesitant readers. Many of the students read books from only one or two authors or genres in the early part of the year. Several months later, they were reading books from a variety of authors and from a wide range of genres. Some of their favorite authors were Mary Downing Hahn, Avi, Lloyd Alexander, Caralyn and Mark Buehner, Mark Teague, Susan Cooper, Lynne Reid Banks, Betty Ren Wright, Louis L'Amour, and Bill

Watterson. They enjoyed genres such as historical fiction, poetry, informational books, fantasy, science fiction, and contemporary realistic fiction. They also enjoyed reading mysteries, comic books, sports stories, and humorous books. Students read widely in both picture books and chapter books. They also showed enthusiasm for book orders and book fairs, and many students mentioned that they were building personal libraries at home.

Student sharing of favorite books occurred often in this classroom. Students discussed books in small groups or with the entire class. This method of sharing excited most of the students and many books were exchanged among friends. Students told one another about the good books they were reading or had read and they helped one another to find interesting literature to read.

Results of Formal and Informal Tests

Pre- and posttests of both the formal and informal measures were used to examine growth in students' reading achievement. Formal measures were used to measure growth in vocabulary and comprehension. Informal measures were used to document changes in reading rate and accuracy.

Students read a one-page selection taken from a fourth-grade basal reader to determine their reading rates. Results of this pre- and posttest showed that students increased their rates of oral reading dramatically during the school year, averaging an increase of 48.3 words per minute (wpm) per student. By contrast, Lipson and Wixson (1991) report average oral reading rate increases for fourth graders is approximately 20 wpm over one school year. At the beginning of the year, the students' average reading rate was 117.9 wpm, increasing to 166.2 wpm by the end of the year. In terms of the data from Lipson and Wixson, these students began the year reading at a rate expected for third graders (in the 105 to 125 wpm range) and ended the year reading beyond the sixth grade level (the 140-160 wpm range).

We also evaluated students' accuracy of oral reading. This was calculated by using the oral reading miscue data. We found that students' average reading accuracy increased from 94% of the words read correctly at the beginning of the year (range from 81-99%) to 97% correct by year's end (range of 92-100%).

We administered the Gates-MacGinitie Test as a pretest in early September and as a posttest in March the following year to measure changes in vocabulary and comprehension abilities. Table 1 summarizes the overall results of that testing, including both vocabulary and comprehension scores. For the vocabulary test, we found that the students gained approximately one year's growth (1.1) over the seven month period of time. This rate of increase is about what should be expected for fourth grade students. However, students achieved nearly three year's increase in comprehension over the same time period with a class average of 2.7 years. Since this rate of growth was

greater than expected, we took a closer look at the data by analyzing the results by gender and ability level.

Table 1

*Scores of Fourth Grade Students on Gates-MacGinitie
Vocabulary and Comprehension Tests*

	N	Pre-test	Posttest	Gain
Vocabulary	26	4.6	5.7	1.1
Comprehension	26	3.9	6.6	2.7

Gender and Ability Comparison Results

We also analyzed the data by gender and reading abilities of the students. Table 2 presents the results of the Gates-MacGinitie testing by gender. The girls began the school year more than one year ahead of the boys, as indicated by pre-test scores (4.7 years to 3.3 years). Both boys and girls consistently increased their comprehension test scores after seven months of instruction. The girls increased by 2.3 years, while the boys increased by 3.0 years.

Table 2

*Scores of Three Fourth Grade Classes on the Gates-MacGinitie
Comprehension Test by Gender*

	N	Pre-test	Posttest	Gain
Female Students	13	4.7	7.0	2.3
Male Students	13	3.3	6.3	3.0

Tables 3 and 4 indicate results by gender, as well as by ability level. For the girls (Table 3), increases in comprehension test scores were similar. Each group achieved approximately a two grade level improvement over seven months.

Adult Modeling Results

The teacher acted as a positive reading role model in a number of ways as recorded in his field notes. During sustained silent reading and in his reading at home, the teacher read widely. For example, he read 55 chapter books, 10 magazines, and 160 picture books in eight months. This reading, although not shared systematically with the students, helped the teacher increase his awareness and appreciation of children's literature and played a part in his sharing of books with his students.

Table 3

Scores of Female Fourth Graders on the Gates-MacGinitie Comprehension Test by Ability Level

Ability Level	N	Pre-test	Posttest	Gain
Upper Ability	5	5.8	8.0	2.2
Middle Ability	4	4.1	6.4	2.3
Lower Ability	4	2.9	4.8	1.9

Among the boys (Table 4), the lower ability level students made the greatest gains. Those boys increased their scores by four years.

Table 4

Scores of Male Fourth Graders on the Gates-MacGinitie Comprehension Test by Ability Level

Ability Level	N	Pre-test	Posttest	Gain
Upper Ability	5	4.7	7.3	2.6
Middle Ability	4	3.9	5.6	1.7
Lower Ability	4	2.4	6.4	4.0

During the reading period each day, the teacher introduced children's books to the students and read during sustained silent reading. During the first seven months of school, he introduced over 280 books to the students. He also read aloud seventy books to the students during this period, seventeen of which were chapter books. From lists of the students' favorite books, 67% of the girls' favorites

and 83% of the boys' favorites were books he had either read aloud or had shared with the class. Clearly, the books read by the teacher to the students had a great influence on what the students chose to read. As a result of extensive reading both in and out of school, the teacher became more familiar with children's books, broadening his reading interests and leading him to discover new authors.

Parent volunteers also served as reading role models. Students read to or with these parents several times each week for a three month period. Parent volunteers also read books aloud to small groups during holiday parties at Halloween, Thanksgiving, Christmas, and Valentine's Day. The purpose of using parent volunteers was to allow them to serve as reading role models and to assist students in improving their oral reading accuracy, fluency, and comprehension.

An additional reading role model was another sixth grade teacher from the school who was in the process of writing a children's story about the experiences of his younger brother. That teacher spent several weeks reading his story aloud to the class after each lunch recess. The students were thrilled to hear the humorous events and eagerly anticipated seeing the book published.

The school principal was another reading role model. He read aloud his favorite picture book and shared some secrets he had learned about the illustrations. Throughout the year, he read and responded to class stories the students had written and displayed them on his office door for other students to read.

DISCUSSION

Although we cannot positively conclude that the methods used for reading motivation caused the increases in reading interest and ability demonstrated by these students, test results and our observations indicate that students were involved in dramatic, powerful changes in their reading habits, attitudes, and abilities.

Student Outcomes

A notable outcome of this study was the dramatic increase in reading comprehension among all students. Among all groups, growth in reading comprehension, as measured by the Gates-MacGinitie test, was over two years instead of the expected one year's growth. This increase was especially noticeable among the lower ability readers. For both boys and girls, the greatest gains in comprehension scores were among the lower reading ability students. At the beginning of the year, we felt that these readers had the ability to read, but lacked the desire. Later in the year, when they began to enjoy reading books, their reading abilities increased markedly. We were particularly impressed that those students who had the least interest in reading at the beginning of each school year were among those who had made the greatest gains on the reading achievement tests.

The increases in students' rate of reading was impressive. Students on average increased their rate of reading by approximately three years, based on guidelines from Lipson and Wixson (1991). When readers increase their rate of reading, they usually also increase their sight vocabulary and their comprehension (Samuels, 1979). The increase in students' comprehension scores on the Gates-MacGinitie test and their increase in reading accuracy, as measured by the informal oral reading test, support Samuel's argument. Students in this study achieved marked gains in rate of oral reading, reading comprehension, and oral reading accuracy.

The amount of independent reading the students completed during this year was tremendous. When given time to read and provided with a wide variety of reading materials, students read a great deal. The 2100 books that these fourth graders read in seven months exceeded our expectations. Because the students read more and were exposed to a greater variety of books, they all became able to identify favorite titles and authors. We observed students sharing book titles with each other. Students obviously enjoyed taking suggestions from their peers. On many occasions informal, unplanned book swapping occurred among students, and they held impromptu discussions about books they had purchased or checked out of the library. A consistent result was that students chose to read many of the books that the teacher had read to them. Some of their favorite books were ones that had been shared in class. Although this finding was not a great surprise, it was exciting to witness.

Picture books seemed to hold interest for all of the students, particularly the lower ability readers. This was so, perhaps, because students could read enjoyable material at their level and finish reading the book at one sitting. By feeling that picture book reading was permissible, they likely had more practice reading than if they had been required to read only "challenging" books on grade level. After they had become more able as readers, these lower ability students voluntarily chose to read books that were more difficult.

We learned that it is critical for the teacher to thoroughly know his/her students' reading interests. An examination of students' reading records revealed a wide range of reading material used by the students, so satisfying the reading appetites of all students was a challenge. Providing students with a wide choice of reading materials and sharing books regularly with students seemed to help maintain their interest in reading. Since only a small percentage of books read by the students were national award-winning books, teachers need to be familiar with the reading interests and reading abilities of their students, as well as with children's literature. Relying only on award-winning books to satisfy student interest may not be effective. Teachers must be knowledgeable about a variety of books appropriate for children. When teachers read extensively in children's literature,

they become better able to recommend books that children will enjoy reading.

Another satisfying outcome of the study was the frequency with which students began to read and discuss books on their own with no assignment or class activity expectation. Teacher observation showed clearly that students spontaneously talked to each other about what they were reading. Conversation and conferences with parents revealed that reading at school and at home became a much greater part of the lives of these students. Books and authors became natural topics of conversation.

Adult Influence

Although we knew from the literature that the teacher represents a major influence in the classroom, we were pleased to find that the students' favorite books to read independently were very frequently books that the teacher had read to them or shared with the class. Among girls, 67% of the books they reported reading independently were books the teacher had shared with the class, while for the boys the percentage was 83%. If teachers will read regularly to their students, they might be able to help their students find books that interest them.

A few times during each school year, the teacher failed to read during the entire silent reading period, dealing instead with management concerns or other pressing needs. He learned quickly that actions speak louder than words. Several students in class mirrored his actions, quickly finding other things to occupy their time during the sustained silent reading period.

We also found that the parent volunteers who came into the classroom to read with the students influenced their reading. Comments by the students and the parent volunteers in the form of unsolicited thanks, as well as comments from parents and feedback provided at student-educator-parent conferences, indicated that the practice of adults reading with children increased the likelihood that the students would read independently.

RECOMMENDATIONS

Based on the results and experiences of this study, we have found that there are specific actions that a teacher can take that may increase students' motivation to read, as well as increase their reading comprehension, rate of oral reading, and accuracy of oral reading. As a result of this work, we have developed the following recommendations that teachers can follow to motivate readers in the elementary classroom and to increase some crucial reading skills: 1) Read aloud to students daily; 2) Provide for daily sustained silent reading; 3) Model personal reading enjoyment each day; 4) Provide for formal and informal book sharing; 5) Regularly provide students with a

collection of reading materials from the school or community library;
6) Arrange for effective use of community volunteers to encourage recreational reading.

Each of these six recommendations is relatively simple and inexpensive to implement. However, making time in the school day for them is a major concern. When we consider the many benefits that result from implementation of these few, simple practices, we feel that students will benefit, and that they may become life-long readers and learners. Although we implemented this program to increase students' motivation to read, we found not only that they read more and were more excited about books they read, but they also increased their reading ability.

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Academic Diversity: Reading Instruction for Students with Special Needs

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ABSTRACT

Provisions to assure that all children are provided quality reading instruction have always been a concern for classroom teachers. Today, greater sensitivity to learners with special needs has led to their inclusion in regular classrooms for the full instructional day. Implications for the reading instructional program are clear; it must employ a variety of instructional and organizational techniques to suit a wide range of student abilities. This article addresses legislation that led to the present focus on classroom inclusion for students with special needs and accommodation of the students with special needs in the classroom reading program. Particular discussion is focused on children who are diagnosed with attention-deficit hyperactivity disorder (ADHD) and children identified as intellectually gifted. Specific recommendations and examples are given that will help these children reach their full academic potential and allow them to experience success in a regular classroom reading program.

Special students are those who have unique needs. Included in this group are physically, emotionally, or learning disabled, as well as gifted students. In this article we provide: 1) an overview of legislation that led to the present focus on classroom inclusion for students with special needs; and 2) a discussion of the special needs reflected in classroom reading programs, focusing on attention-deficit hyperactivity disorder (ADHD) and giftedness. We chose to discuss the special needs of these children to illustrate the range of academic diversity within reading programs that truly embrace an inclusionary model of instruction.

Addressing individual student needs in reading instruction has always been an immense responsibility for teachers of reading. Providing appropriate reading instruction that meets the needs of

individual students within a group demands many lengthy hours of preparation by teachers. Classroom teachers have continually adapted their instruction to accommodate an ever expanding and changing group of students. Today, with the implementation of the Individuals with Disabilities Act (IDEA), teachers are further searching for effective means to provide relevant reading education for students with special needs.

Legislation That Created Change

In 1975, the passage of P.L. 94-142 (the Education for all Handicapped Children Act) occurred. This was a significant change for education in the United States. P.L. 94-142 affected the placement of students with disabilities by allowing them to be mainstreamed into regular classrooms. The act clearly indicated that children with disabilities must be placed in the least restrictive environment, which was interpreted, in many cases, as the same environment as for regular students. The trend to educate children with disabilities in the closest possible proximity to the regular classroom in which they can succeed has been referred to as mainstreaming. Lewis and Doorlag (1991) define mainstreaming as "[The] inclusion of special students in the general education process. Students are considered mainstreamed if they spend any part of the school day with regular class peers. In a typical mainstreaming program, special students in regular classrooms participate in instructional and social activities side by side with their classmates. Often they receive additional instruction outside the regular classroom from a special educator such as a [reading] resource teacher" (pp. 3-4).

In 1990, P.L. 94-142 was amended in ways that reflected a more sensitive approach to individual strengths of students rather than highlighting their disability. As part of the concern for the individual, the Individuals with Disabilities Act (IDEA) has reexamined mainstreaming in general. Mainstreamed students were often involved in pull out programs, such as reading resource instruction in Chapter I. The fragmentation of the school day motivated some concern for the individual student and advanced the question: Is this the best instructional setting to meet academic needs of children with special needs? Thus, this question has led us to seek a more effective academic environment for children with special needs. Greater sensitivity to individual learners with special needs has meant proposing inclusion as a viable solution.

Benefits and Demands of Inclusion

Inclusion means that special needs students are assigned to regular classrooms for the full instructional day and are allowed to participate in all school activities and functions. This type of inclusive atmosphere can provide adequate support systems. IDEA requires

that classrooms must be made physically accessible to accommodate all students with special needs. In addition to physical setting, provisions need to be made for additional personnel, staff development, and technical assistance. This may mean that in addition to the regular classroom teacher a special education teacher is available to co-teach the entire class. A co-teaching arrangement limits the possibility that any child or group of children is singled out as being different because of each teacher teaching only to part of the class. The co-teaching arrangement is a collaborative effort by both teachers in planning, delivering, and evaluating their instruction (Friend and Cook, 1992).

For inclusion to work, teachers need to create a classroom atmosphere where differences are explicitly addressed and discussed by everyone in the class, with teachers modeling appropriate "accepting" behaviors. The intent is to promote a classroom where students become a group continuing to develop as readers, and no student is singled out because he or she is different. Thus, students in the class are as much responsible for the success of inclusion as the classroom and special education teachers. One way to ensure student involvement in the inclusion process is to use cooperative groups as an instructional method. By allowing students to work cooperatively in groups all students share in the contributions to the learning process and are more likely to develop a positive attitude toward individual differences.

Creating a Reading Classroom that Embraces Academic Diversity

The success of students placed in the least restrictive environment depends upon the cooperation of teachers, administrators, specialized personnel, and parents. In essence, however, individual teacher's ability to accommodate all students in the regular classroom determines the success or failure of such efforts.

Implications for the reading instructional program are clear; it must employ a variety of instructional and organizational techniques to suit a wide range of student abilities. A classroom and school environment that encourages the constructive interaction of special need students with regular students must be established. Most children with special needs do not require specialized reading instructional techniques, but need a simple quality reading instruction designed from an assessment of their reading strengths and weaknesses. Indeed, the similarities among special children and typically developing children are greater than their differences. Labeling academically diverse children gives teachers little usable information about how to develop an appropriate instructional program that will work within their reading curriculum. One positive aspect of IDEA is that it shifts the focus away from use of labels toward consideration of students' educational needs.

An individualized education plan (IEP) provides the most appropriate educational program for many students with special needs. An IEP is a written plan for each special child that details his/her instructional program. In accordance with the Individuals with Disabilities Act (IDEA), the IEP must include the following components:

- 1) The student's present achievement level, including the student's strengths, weaknesses, and learning styles;
- 2) A statement of annual goals and benchmarks that indicate attainment of these goals;
- 3) A list of long-term and short-term instructional goals, including materials, strategies, and assessment measures intended to indicate mastery;
- 4) A statement detailing specific special educational services to be provided to the student and the extent to which the student will participate in the regular classroom;
- 5) Classroom modifications that need to be made in general teaching techniques and content in order for the child to reach his/her potential;
- 6) Identification of the person(s) (or agent) responsible for teaching each objective;
- 7) Project data for the beginning of program services and the anticipated duration of the services.

The IEP is an educational plan that the multidisciplinary team, which includes the school, teachers, children, and parents develop jointly. The basic ingredients of an IEP are not new; they are essentially those of a good teaching plan. It is important to avoid thinking of inclusion (or least restrictive environment) as separate or different from the basic principles associated with any good learning environment. The principles of a quality learning environment include all aspects of an IEP, and thus the process of equal education for all children.

Inclusion of the Attention-Deficit Hyperactive Child

In today's classrooms many children appear to have difficulty staying on task and maintaining attention. Some of these children are diagnosed with attention-deficit hyperactivity disorder (ADHD). It is estimated that approximately three to five percent of the United States school age population is affected by attention-deficit hyperactivity disorder (ERIC Digest, 1996). This disorder is the most frequently occurring disorder to affect our school age children (Neuwirth, 1994).

According to Fowler (1994) ADHD is a syndrome characterized by having serious and persistent difficulties for the learner in the following three areas: attention span, impulse control, and hyperactivity. ADHD may be a relatively new term, but the disorder has been found in the medical literature for over a 100 years. The American Psychiatric Association, (ERIC Digest, 1994) stated that

in order for a child to be diagnosed with the ADHD a child had to display for 6 months or more at least eight of the following fourteen characteristics prior to the age of seven: 1) Fidgets, squirms, or seems restless; 2) Has difficulty remaining seated; 3) Is easily distracted; 4) Has difficulty waiting turn; 5) Blurts out answers; 6) Has difficulty following instructions; 7) Has difficulty sustaining attention; 8) Shifts from one uncompleted task to another; 9) Has difficulty playing quietly; 10) Talks excessively; 11) Interrupts or intrudes on others; 12) Does not seem to listen; 13) Often loses things necessary for tasks; and 14) Frequently engages in dangerous actions.

ADHD is often a syndrome synonymous with hyperkinesis, a minimal brain disorder, hyperactivity, or learning disability. In the past, these children often spent part or all of their instructional time outside the regular classroom. They may have been placed in a special education classroom, reading clinic or resource classroom, or alternative classroom for children with behavioral problems. Today, these children are included in the regular classroom and are often the most academically capable in reading when their special needs are met.

One need is frequently met when physicians prescribe stimulants, such as Ritalin, to help reduce hyperactivity, and improve the student's ability to focus, work and learn. According to Neuwirth (1994) the use of medication has sparked quite a debate. Many critics argue that medication is often prescribed unnecessarily and that some students on medication may experience weight loss, grow at slower rates and have difficulty with their sleep patterns. Historically, many children with ADHD have been helped tremendously with proper medication. If physicians carefully monitor a child's height, weight, and overall development the use of medication to help control ADHD is beneficial to the student and the positive results far outweigh the potential side effects.

Teachers can also meet the needs of ADHD children through behavioral support by creating an environment conducive to academic performance. Such an environment is crucial for literacy instruction because students need to devote full attention to comprehending, writing, and learning from meaningful text. Teachers who give careful consideration to the following environmental features will facilitate ADHD students' learning:

- Seat students with ADHD near the teacher's desk but include them as part of the regular class seating;
- Place ADHD students up front with their back to the rest of the class to keep other students out of view;
- Surround ADHD students with good role models, preferably students whom they view as friends or whom they respect as learners;
- Support and encourage peer tutoring and cooperative and collaborative learning;

- Avoid distracting stimuli. Do not place students with ADHD near air conditioners, high traffic areas, heaters, doors, or windows;
- Avoid or minimize transitions, physical relocation (monitor them closely on field trips), changes in schedule, and disruptions;
- Create a stimuli-reduced study area. Let all students have access to this area so the students with ADHD are not singled out as being different;
- Provide parents with suggestions on how to establish study routines, develop review of completed homework, projects, and notebooks, and organization of materials at home; and
- Solicit from parents information about what works well for them to help their child stay on task and respond positively to new situations. Valuable insight can be gained by maintaining ongoing contact so that both teachers and parents can learn and support each other's efforts to meet the educational, social, and emotional needs of the child.

Classroom environment is crucial to helping students with ADHD be productive members of the classroom. Predictability and a structured environment enhance students' ability to focus attention on instructional features. The following instructional guidelines are easily applied in a variety of literacy settings:

- Maintain eye contact with the child during verbal instruction;
- Present directions in a clear and concise manner. Daily directions should be consistent and as predictable as possible;
- Clarify complex directions and avoid multiple commands;
- Help students feel comfortable with seeking assistance; and
- Gradually reduce teacher support, however, these children may need teacher support for a longer period of time than other children.

Teachers who modify their reading instruction to meet the needs of the ADHD children will help these students realize their full academic potential and allow them to experience success in a regular classroom. As many elementary teachers have come to realize, the ADHD child is often academically gifted, which increases the breadth of teachers' responsibility for providing an appropriate reading instructional program.

Inclusion of the Academically Gifted Child

Commissioner of Education, Sidney Marland (1972) defined the gifted and talented as "those identified by professionally qualified persons who by virtue of outstanding abilities are capable of high performance. These are children who require differentiated educational programs and/or services beyond those normally provided by the regular school program in order to realize their contribution to self and society"(p. 16). The U.S. Office of Education identified six

areas of giftedness: 1) general intellectual ability; 2) specific academic aptitude; 3) creativity; 4) leadership ability; 5) ability in the visual or performing arts; and 6) psychomotor ability. Gifted students may demonstrate capability of exceptional performance in only one or two areas.

With specific reference to reading abilities, Shaughnessy, Siegel, & Stanley (1994) and Dooley (1993) noted that gifted students' cognitive skills are advanced beyond the activities and materials normally provided for students at their age and grade level. Gifted students may demonstrate some or all of the following characteristics:

- A rich, well-developed vocabulary and interest in words.
- An advanced linguistic ability in sentence construction, expression of ideas, and listening vocabulary.
- An interest in library books and reading in a variety of topics.
- Frequent use of information sources, such as the dictionary, encyclopedia, information text, and computer software to explore ideas and areas of interest.
- An enhanced ability in the area of critical thinking.
- An inquisitive nature to learn.

Identifying gifted children and designing a curriculum to accommodate their learning needs should be accomplished through a variety of formal and informal assessment procedures. Standardized achievement tests, intelligence tests, creativity measures, actual student performance in the reading program, peer nomination procedures, and parent and teacher observations are avenues to employ for this purpose. Giftedness is also not reserved for any one group or class of children. Teachers should not be preoccupied with ethnicity or social characteristics when identifying the gifted and talented. When identifying giftedness in children who speak a language other than English, it is important to employ informal and first language assessment procedures.

For too long, gifted children were expected to be silent and follow along with the regular curriculum designed for less able students. Today's reading teachers and program administrators realize that gifted children have unique needs, as do all students, and require different instructional programs, practice, and support. Gifted readers are not all the same; each has unique strengths and may have specific weaknesses. Thus, they need the same diagnostically based instruction afforded all learners (Shaughnessy, Siegel, and Stanley, 1994).

Meeting the Needs of the Gifted Reader in the Classroom

There are several avenues available to meet gifted readers' needs in the classroom. One way to enhance the gifted students reading performance is to make use of curriculum compacting (Dooley, 1993). Curriculum compacting assures student mastery of basic skills at a proficient rate in order to make time for enrichment and acceleration. Teachers develop assessment measures that will allow

them to identify acquired skills and capabilities in content areas related to the next reading unit. Once mastered skills and content have been identified, the teacher does not provide instructional activities in those areas. This instructional model allows the teacher to concentrate on underdeveloped skills and provide additional enrichment activities and allows the gifted student to progress at an appropriate pace (Dooley, 1993).

Two other instructional approaches for the gifted child are content and process modification (Dooley, 1993). Content modifications enable the gifted reader to read more complex and in-depth selections. The selections that the gifted student reads can be related to the same theme, topic or genre of the regular classroom instruction. For example, if students were studying World War II, all students might be encouraged to read *The Diary of Anne Frank* during reading instruction. In addition to *The Diary of Anne Frank*, the gifted child might also read *Zlata's Diary* so he/she has the opportunity to make connections between the way Jewish people of Nazi Germany suffered and the way the Bosnians of Sarajevo suffered. These types of content modifications allow gifted students more control over their academic content.

Process modifications require students to use higher level processes to become critical readers, and to enhance their abilities to make judgments about the authenticity, accuracy, and validity of what they read. One way to help all students become more creative and critical readers is by effective questioning strategies, use of reading guides, and integration of writing with reading. Integrating writing and reading to promote the development of critical thinking can be accomplished by teaching writing as thinking process (Jampole, Konopak, Readence, & Moser, 1991). Developing writing skills as a logical thinking process enables gifted students to refine, synthesize, and elaborate upon their understanding of a particular topic.

Application in the classroom and observation support instructional practices such as compacting the curriculum, modifying content, and modifying process; however, many teachers do not use these approaches. One underlying reason for this lack of implementation may be their concern for efficient classroom management. Teachers may ask themselves how can I organize and plan for a high percentage of academically engaged time for my diverse students? Curriculum compacting assesses every child; by determining the needs of all students, time is freed for enrichment activities. Teachers who maximize effective use of content and process modifications are not adding more work to their instructional day, rather they are actually enhancing the content of what they are teaching.

Gifted students learn material faster than other learners and may require less practice and fewer application activities. Providing such differentiated instruction requires diagnosis of students' strengths

and weaknesses. To provide the decisive and most effective lessons for gifted students the teacher must consider their abilities, needs and interests. Once again, this should not be considered an extra burden to the teacher. Instead, it should be considered part of the daily instructional practice that the teacher uses with all students.

SUMMARY

The ability to deal effectively with student diversity is crucial to teaching reading. A key to successful inclusion of students with special needs is recognizing and addressing their concerns in the regular classroom. The ability of teachers to handle differences effectively translates into instructional practices that provide for each student's self-respect and lead all students to feel secure in the classroom (Heilman, Blair, & Rupley; 1998).

Students who have special needs are increasingly taught in the least restrictive environment, which often means the regular classroom. Mainstreaming and inclusion provide the most appropriate education for each student in the least restrictive setting. Inclusion considers the educational needs of students rather than their clinical labels. A major ingredient of the legislative mandate for mainstreaming is the development of an individualized education plan (IEP) for each student with disabilities. The regular classroom teacher's total involvement in the team process is foremost in the successful implementation of the IEP. All students would benefit from the same individual approach to learning that students with special needs receive.

ADHD is one of the most common disorders among children, and on the average, at least one child in every classroom in the United States has this disorder. While at times this disorder can be frustrating and disruptive to the classroom teacher, there are effective environmental and instructional strategies that the teacher can take advantage of to ensure a successful learning climate for the child with attention-deficit hyperactivity disorder. This is particularly important because many students with ADHD are also academically gifted.

Reading curricular goals are the same for gifted students as for all readers. Accommodating the needs of the gifted learner is best accomplished by modifying the content, methodology, and instruction for gifted readers. A wide variety of theme literatures can be used to tap gifted students' abilities and interests. Availability of books ranging from award winning literature to popular serials is a primary ingredient in creating the successful literacy experience for gifted readers.

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Word Class: Using Thinking Skills to Enhance Spelling Instruction

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ABSTRACT

Traditional spelling instruction has students studying words out of the context of authentic reading and writing. This type of instruction does little to move students to become mature writers. Spelling is a development process. The ability to spell is enhanced by wide reading and writing. Proficiency in spelling is related to one's visual memory more so than to instruction which examines words in isolation. Word class is an approach to spelling that combines a self-selected approach to spelling instruction and thinking skills. This approach to spelling instruction helps students become more sensitive to letter patterns and word parts, adds depth and dimension to their vocabulary, teaches thinking skills, creates more authentic thinking and writing experiences, and values students' ideas.

In many schools today, traditional basal spelling programs are used consisting of weekly spelling lists, a pretest, a series of fill-in-the-blank exercises, and a test on Friday. The same list, usually based on a spelling pattern or word part, is given to all students. Those students who have more difficulty are given fewer words and those who have less difficulty are given more words. At the end of the week, students' spelling performances are described in terms of a number of percentage.

But does this one-size-fits-all approach effectively differentiate spelling instruction for high or low ability learners? Is this the most effective way to develop mature spellers? Is this the best use of instructional time? Does this approach move students closer to becoming independent writers? Does this type of spelling instruction transfer to real life writing situations? According to Donald Graves, "no" (1983). Words studied out of context are of minimal effect in helping students develop spelling proficiency and worse, they keep them away from real writing experiences. Also, there is little research to support the use of traditional spelling instruction over other approaches.

This article describes a more authentic approach to spelling instruction based on the ideas put forth by Gentry and Gilbert (1993). Word Class uses thinking skills to study word meanings and spelling patterns.

BACKGROUND

Spelling as a Developmental Process

Like oral language, spelling is a developmental process that evolves in stages (Butler, 1996; Edwards, 1985; Gentry and Gilbert, 1993). An extensive program of meaningful reading and writing is essential in helping students move from one stage to the next (Bartch, 1992; Cunningham, Moore, Cunningham, and Moore, 1995; Graves, 1983; Gentry and Gilbert, 1993, Scott, 1994). Wide reading allows students to see a greater number of words with varying letter patterns used in meaningful contexts. Wide writing allows them to effectively use words to create meaning. Providing sufficient amount of time for students to engage in authentic reading and writing experiences is an important component in their development as mature readers and writers. Unfortunately, time spent studying words out of context in basal workbooks limits these types of experiences.

Spelling Proficiency and Visual Memory

What is the difference between a good speller and a poor speller? According to Gentry and Gilbert (1993), spelling proficiency might be attributed to one's visual memory capacity. That is, good spellers are better able to store and retrieve necessary letter patterns from long term memory. Building on this theory, the goal of spelling instruction should be to improve the efficiency of cognitive storage and retrieval by helping students become more aware of letter patterns and word parts. Only a small amount of direct instruction covering a few spelling rules and the most common prefixes, suffixes, and word families is needed (Topping, 1995). This suggests a need to examine approaches to spelling instruction which focus on letter patterns and using words in authentic contexts.

Two Alternative Approaches

Two alternative approaches to traditional spelling instruction are an embedded approach and a self-selected approach. An embedded approach uses spelling words that are taken from students' reading, science, social studies, or other subject areas (Bartch, 1992; Scott, 1994). It also allows for multiple exposures to words used in a meaningful context. The self-selected approach teaches students how to create their own spelling lists (Graves, 1983; Scott, 1994; Topping, 1995). This approach is described further below using word class.

Figure 1
Thinking Skills Used for Word Class
*Four thinking skills and accompanying
thinking frames used for Word Class.*

Brainstorming

The student will be able to create a number of ideas without regard to evaluation.

Thinking Frame

1. Look at the idea.
2. add as many related ideas as quickly as you can.

Webbing and Brainstorming

Students will be able to create a structure relative to a given topic or concept, then brainstorm to fill in the structure.

Thinking Frame

1. Look at the main idea.
2. Find 2-3 related ideas (nodes).
3. Brainstorm on each node.
4. Describe or communicate.

Creating Groups

Students will impose order on a field by identifying and grouping common themes or patterns.

Thinking Frame

1. Look at the whole.
2. Identify patterns, or groups.
3. Arrange into groups.
4. Describe the whole in terms of groups (write or speak).

Comparing

Students will identify the similarities between two or more items. Students will use a Compare-O-Graph (see Figure 5) as a visual organizer to help with this skill.

Thinking Frame

1. Look at the items.
2. Brainstorm to find similarities.
3. Pick interesting ideas to describe.

WORD CLASS

Word class combines thinking skills instruction with a self-select approach to spelling instruction and can be adapted for used in grades 2 through 12. A thinking skill is any cognitive process broken down into explicit steps (Johnson, 1996; Perkins, 1986). If students are to

learn to use higher level thinking skills, they must be explicitly taught (Gallagher and Gallagher, 1994; Johnson, 1996; Perkins, 1987). Word class does this by identifying four different thinking skills and the specific steps used (see Figure 1).

Word class teaches students how to generate and choose the words they will study each week. This choice might happen in one of three ways: First, given a topic, students create their own spelling lists. Second, given a spelling pattern, students create their own lists. Here, the teacher begins with a short mini-lesson covering a particular spelling pattern or skill. Students then work with a partner or small group to create a list of words using that particular letter pattern or skill. Or third, students use their interests, current reading, or their experiences to create their own spelling lists. This approach is usually the most interesting, as children search their lives for interesting and meaningful words.

A word wall (Cunningham and Allington, 1994), can be used to help call attention to interesting or important words within the given topic or spelling pattern. To insure that students are exposed to words of varying difficulty levels, a teacher might choose to include two to five mandatory words for all students to study each week. However, Topping (1995) found that the words students choose are usually longer and more complex than those chosen by teachers.

There are four advantages of using the self-selected approach: students' ideas and experiences become the focus; more time can be spent doing authentic writing; money spent on consumable spelling books can be used to buy trade books; and students are able to add depth and dimension to their word knowledge.

WORD CLASS WEEKLY SCHEDULE

Spelling instruction should be limited to approximately 20 minutes a day (Gentry and Gilbert, 1993). The following weekly schedule uses four general thinking skills (Johnson, 1996) along with thinking frames to provide eight different activities (see Figure 1). These skills add depth and dimension to word knowledge, highlight letter patterns, enhance writing skills, teach general thinking skills, value students' ideas and experiences, and gets them to use their words in meaningful contexts.

Monday

Brainstorming. Working with a partner, students use brainstorming to generate 8-15 words to use for their spelling lists. After they have selected words for their lists, they check the correct spelling in a dictionary or on a computer spell-check and record them in a word journal or learning log. For example Joey, a 6th grade student who was very much interested in space, came up with the following

spelling list: space, rocket, planet, oxygen, gravity, life, universe, moon, atmosphere, launch.

Tuesday-Thursday

Working individually or with a partner, students use thinking skills for the following activities.

Brainstorm and describe. Here, students brainstorm to create a group of descriptive words or association to go with one or more of words on their list. Students then use these associating words to write a descriptive paragraph. For example, one of the spelling list words is "launch." Words, thoughts, or images associated with this word are: take-off, smoke, noise, rumble, power, liftoff, launch pad, fire, or push. Many of these words can then be used to describe a rocket launch. Below is a sample of such a paragraph written by Joey, a sixth grade student.

A launch is when a rocket takes off into space. The rocket is fired into space from a launch pad. It is powered by powerful rocket engines. Thick smoke and loud noise sound as the rocket pushes away from earth (Joey, age 12).

Allow time for students to share their creations in large or small group settings. At the end of the lesson, students record their best or most interesting paragraphs in their word journal.

Web and brainstorm to write. Here, students use webbing and brainstorming to create a piece of writing based on one or more of their spelling words. The web provides structure for a piece of writing when generating ideas or information about a topic (see Figure 2). Each node becomes a paragraph. At the end of the lesson, students record their best or most interesting piece of writing in their word journal.

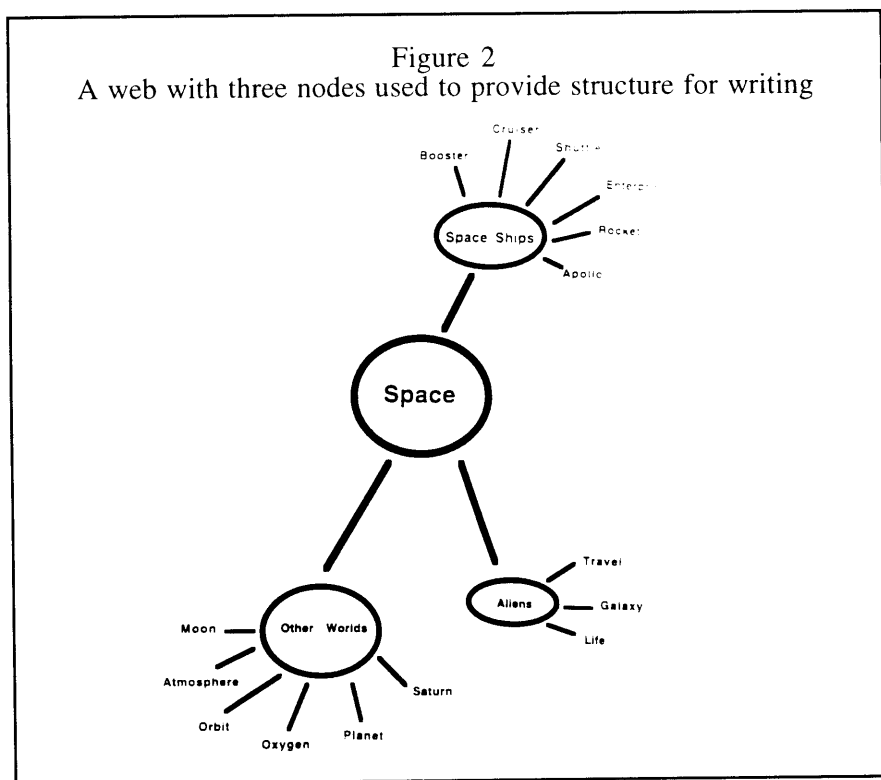
Webbing to speak. Students pick a word from their spelling list to use in creating a short one-minute oral presentation. Working with a partner they web and brainstorm to provide information and ideas related to the list word for their oral presentation. A web, with two or three nodes, provides the structure to help them communicate effectively. The goal here is to add depth and breadth to word knowledge and to get students to use their words and related ideas in a meaningful context.

Web to find related parts. Here, students use webbing and brainstorming to examine phonetic elements of a word. The goal is to analyze words and letter patterns. Students choose a word from their spelling list and break it into beginning, middle, and ending segments (see Figure 3). They decide which parts of the words go into each of the three segments. This leads naturally to talk about prefixes, suffixes, roots, onsets, and word families. Also, it allows them to see patterns emerging. Each segment then becomes a node on the web.

Students work with a partner to generate words with similar sounds or letter patterns as those in each node. Each web is recorded in the students' word journal.

Creating groups. The thinking skill, creating groups is used by students to organize their spelling words into groups. A group is two or more things that are the same or alike. Groups are created according to spelling patterns or ideas (see Figure 4). The teacher should model this in a large group setting several times before students do this in pairs or small groups. At the end of the lesson, students describe and record their lists using their new groups in their word journals.

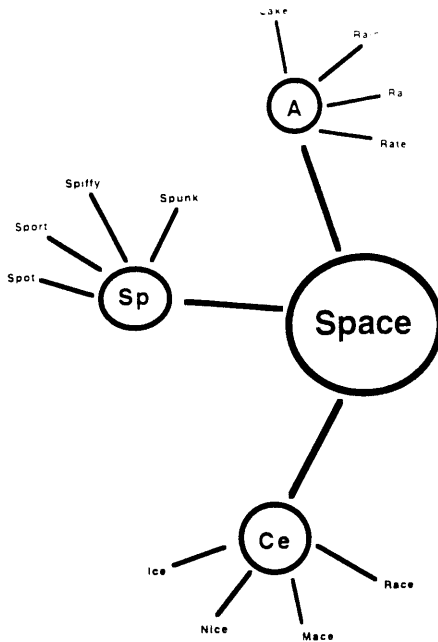
Comparing. Here, students begin to look for similarities between words related to ideas or letter patterns (see Figure 1). Students use the Compare-O-Graph (see Figure 5) to compare five words at a time. Their Compare-O-Graphs are recorded in their word journals.



Poetry. Word Class is also a perfect place to use poetry as the process of using words to paint a picture. Poetry is an effective tool for advancing children's language skills and high level thinking as it

calls for careful observation and a precise use of words. Writers of poetry must also be attuned to patterns, sounds, and the subtle effect of words. Students can use the thinking skills of comparing to generate similes and metaphors and webbing and brainstorming to generate ideas around a specific spelling word.

Figure 3
A web with three nodes used to examine word parts



Friday

On Friday, students work with a partner to take their weekly spelling test. Each partner gives the test to the other. The teacher or student records the results after the test is complete along with reflections or observations.

ASSESSMENT

The results of weekly spelling tests are recorded in students' word journals. These journals might be included as part of a writing portfolio to show growth over time. Students might also chart their progress by graphing the results of each weeks' test. I recommend, however, a more authentic and accurate form of spelling assessment called WPH (words-per-hundred) scores. Here, the teacher examines a

students' writing, designates a 100-word segment, and counts the number of words spelled correctly in that 100-word segment to arrive at a WPH score. This is a more accurate reflection of spelling ability under authentic writing conditions rather than scores taken from isolated word lists. With younger students, a WPF (word-per-fifty) score can be used.

Figure 4
Examples of groups based on spelling patterns and ideas
Creating Groups

Spelling Pattern Groups

	List: space, rocket, planet, oxygen, gravity, life, universe, moon, atmosphere, launch
Ending e-consonant group:	rocket, planet, oxygen, atmosphere
Final e group:	space, life, universe, atmosphere
Double consonant group:	space, rocket, planet, atmosphere, launch
Consonant blend group:	space, planet, gravity, atmosphere, launch
Three-syllable group:	oxygen, gravity, universe, atmosphere

Idea Groups

	List: space, rocket, planet, oxygen, gravity, life, universe, moon, atmosphere, launch.
Spaceship group:	rocket, launch.
Planet group:	moon, atmosphere, gravity, planet.
Huge group:	space, universe.
Earth group:	planet, oxygen, gravity, life, moon, atmosphere.
Invisible group:	space, oxygen, gravity.

Figure 5
A compare-o-graph used to find similar spelling
patterns or ideas related to spelling words.
Compare-O-Graph

Spelling list: space, rocket, planet, oxygen, life, universe, moon, atmosphere, launch

	rocket	planet	oxygen	gravity
space	- e - double consonant - 2 vowels - 3 consonants - a rocket travels in space	- e - a - consonant blend - 2 vowels - a planet is in space	- e - no oxygen in space	- a - 2 vowels - consonant blend - no gravity in space

* Students will pick out 2 or 3 interesting ideas to describe in paragraph form.

FINAL THOUGHTS

Spelling does not have to be a meaningless subject emphasizing rote memorization while learning new words out of context. Word Class, as described here, can be used with all students to help them become more sensitive to letter patterns and word parts, add depth and dimension to their vocabulary, promote students' ideas and creativity, teach thinking skills, create more authentic thinking and writing experiences, and thus, enhance language learning overall.

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The Application of First Language Reading Models to Second Language Study: A Recent Historical Perspective

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ABSTRACT

This article examines the influence of first language reading models on second language reading theory and research. Second, this essay recommends a sharing and transfer of knowledge between related disciplines, such as first- and second-language reading, to increase our understanding of the reading process, regardless of the target language.

INTRODUCTION

As the theories and methods of second language learning have evolved over the past century, so have models of reading comprehension. However, the extension of first language reading theories and models to the domain of second language and English as a Second Language (ESL) reading study is a relatively new development (Carrell, 1988). Clearly, research focusing on both first- and second-language reading would benefit from a sharing of knowledge between these two disciplines. Therefore, this article describes the recent history of major first language reading models, in light of their application to second language reading study, in the hopes of increasing the sharing of information and knowledge between these sibling disciplines.

FIRST LANGUAGE READING MODELS: THREE TYPES

A reading model "provides an imagined representation of the reading process that not only provokes new ideas about reading but also provides a paradigm against which aspects of the reading process may be tested" (Barnett, 1989, p. 10). In general, most of the first language models of reading comprehension that have been introduced into the second language literature can be placed into one of three main categories: top-down, bottom-up, or interactive. The major distinction between top-down, bottom-up, and interactive groups

of first language reading models is the emphasis placed on text-based and reader-based variables. Text-based variables include items such as vocabulary, syntax, and grammatical structure, whereas reader-based variables involve the reader's background knowledge of the world and texts, cognitive development, strategy use, interest, and purpose in reading (Barnett, 1989).

Early theories of reading considered the reading process to be a passive, bottom-up activity. Reading was viewed as a decoding process where the reader reconstructs meaning from the smallest textual units (Carrell, 1988). Bottom-up skills include discriminating between sounds and letters, recognizing word-order and suprasegmental patterns or structures, and translating individual words (Shrum and Glisan, 1994). This bottom-up vision of the reading process was well suited to the audiolingual method of second language instruction in the 1960s and 1970s, which considered the decoding of sound-symbol relationships as an essential component of the language learning routine.

Whereas bottom-up processes take the form of a text-based decoding activity (Gough, 1972; McKoon and Ratcliff, 1992), top-down processes are reader-driven (Goodman, 1968; Graesser, Singer, and Trabasso, 1994) and concentrate on what the reader brings to the text in terms of world knowledge (Barnett, 1989; Omaggio Hadley, 1979). In a strict top-down model, such as the original psycholinguistic model proposed by Goodman (1968), the reading process is described as a "psycholinguistic guessing game" (p. 126) where the reader reduces his or her dependence upon the text through activities such as predicting and sampling. Specifically, "the reader uses general knowledge of the world or of particular text components to make intelligent guesses about what might come next in the text [and] samples only enough of the text to confirm or reject these guesses" (Barnett, 1989, p. 13).

The third major class of first language reading models, and the most recent, is the interactive model. The interactive view of reading comprehension involves both bottom-up and top-down processing, or an interactive process between the reader and the text (Bernhardt, 1991; Grabe, 1991; Rumelhart, 1977; Swaffar, Arens, and Byrnes, 1991), with different versions of the model assigning varying degrees of importance to the individual top-down and bottom-up components. According to Barnett (1989), the interactive model provides a cyclical view of the reading process where textual information from the text and the reader's mental activities, such as the processing of graphic, syntactic, lexical, semantic, and pragmatic information impact comprehension. In other words, top-down and bottom-up processes complement one another and function interactively in the reading process.

FIRST LANGUAGE MODELS AS APPLIED TO
SECOND LANGUAGE READING

Most second language reading models are patterned after one of the three major models (bottom-up, top-down, and interactive) developed for first language study. For example, Coady (1979) elaborated upon the initial first-language psycholinguistic model put forth by Goodman and proposed a design specifically tailored to second language reading comprehension. In Coady's model the reader's background knowledge interacts with conceptual abilities and processing strategies. For Coady, conceptual ability refers to general intellectual capacity. Processing strategies, on the other hand, include syntactic information (deep and surface), lexical meaning, and contextual meaning (Coady, 1979; Carrell and Eisterhold, 1988). The interaction among background knowledge, conceptual abilities, and process strategies can also be compensatory in that interest and background knowledge can keep a reader interested in material in spite of structural complexity (Coady, 1979). Given the additional linguistic barriers of a second language, the role of interest and background knowledge becomes increasingly important.

Bernhardt's second language constructivist model (1986) is similar to both Goodman's and Coady's psycholinguistic model in that it emphasizes prior knowledge, word recognition, phonemic/graphemic features, syntactic feature recognition, and intratextual perceptions (Davis, 1994). An interesting addition, however, is the element of metacognition (Barnett, 1989; Flavell, 1976; Garner, 1987; Nelson, 1992), or thoughts about one's own cognitive processes. For Bernhardt, metacognition occurs when a reader is thinking about what he or she is reading (1986). In other words, the "reader recognizes words and syntactic features, brings prior knowledge to the text, links the elements together, and thinks about how the reading process is working (metacognition)" (Barnett, 1989, p. 47).

In contrast to interactive visions of the reading process that emphasize top-down processes in comprehension (Bernhardt, 1986; Coady, 1979), Eskey's second language version (1986; 1988) of an interactive model stresses the need for "holding in the bottom" (p. 97). As in any interactive model, Eskey posits a mixture of bottom-up decoding and information provided by top-down analysis. Nevertheless, Eskey states that he is concerned that the promotion of higher-level strategies, such as predicting from context and the activation of schemata, may be too strong. Moreover, Eskey warns that teachers "must not lose sight of the fact that language is a major problem in second language reading, and that even educated guessing at meaning is no substitute for accurate decoding" (1988, p. 97). To illustrate the importance of bottom-up processes in the interactive model, Eskey uses the following sentence pair: Take three stiggles. Stick them in your ear.

Given that nobody knows what a stiggle is, and that there is no context or extra-linguistic information to suggest that them refers to stiggles, it must be the structure of the language — a bottom-up aspect of the text — that allows the reader to make the connection between pronoun and referent.

A PARADIGM SHIFT

Swaffar, Arens, and Byrnes (1991) describe a paradigm shift in second language acquisition that began in the 1970s when the language teaching profession became disenchanted with a limited system of normed language. Instead of the orthodox concern with bottom-up grammatical accuracy, the profession began to stress language creativity and the expression of personal opinions and thoughts. A broader vision of language performance — as the result of the learner's total knowledge, rather than from language ability alone — had begun to emerge. In other words, cognition and communicative interaction proved to be just as important as accuracy.

Practical implications of the increasing importance of the learner in second language acquisition research and theory — as opposed to the material to be learned — can be found in second-language course work that acknowledges general conceptual abilities and background knowledge by stressing macro-understanding, first language ability, and prior knowledge in a particular subject (Swaffar, Arens, and Byrnes, 1991).

The recent stress placed on the role of the learner in second language acquisition studies is most apparent in reading comprehension research. Top-down models, which replaced the dominance of a strictly text-driven view of the reading process, highlighted the reader's use of context and prior knowledge. The subsequent interactive models demonstrated that "text sampling and higher-level decoding and recoding operate simultaneously" (Barnett, 1989, p. 13). In fact, one of the principal components of interactive reading models is the previously acquired knowledge structures, or schemata, and background knowledge that the reader brings to the reading process.

SCHEMA THEORY

An important element in all of the first language top-down and interactive models described earlier is the role of the reader and what he or she brings to the text by way of experience, knowledge, and expectations. The role played by background knowledge in language comprehension can be explained and formalized in a theoretical model called schema theory (Anderson and Pearson, 1988; Rumelhart, 1980; Schank and Abelson, 1977). Anderson and Pearson (1988) describe schemata as abstract knowledge structures that represent relationships among component parts. Proponents of schema

theory (Rumelhart, 1980; Carrell and Eisterhold, 1988) maintain that an oral or written text does not have any meaning in and of itself. Instead, a text gives direction to readers and listeners concerning how they should retrieve and construct meaning from their own previously acquired knowledge. The store of information, or the previously acquired knowledge of a reader or listener, is called his or her background knowledge.

Although schema has played an important role in reading and listening comprehension theory from the late 1960s to the 1980s, it is not a recent discovery. For example, while researching recall of geometric designs, Wulf (1922), a Gestalt psychologist, described his results by stating that "in addition to, or even instead of, purely visual data there were also general types or schemata in terms of which the subject constructed his responses" (p. 141). Later, in a 1932 work entitled *Remembering*, Bartlett described the term schema as "an active organization of past reactions or past experience" (p. 201).

Rumelhart (1977) describes a schema as an abstract representation of a general concept for an object, event, or situation. Indeed, most people possess an abstract representation for the concept *car*. However, this representation can be altered by additional information concerning the car such as *rustbucket* or *elegant*. According to Schank and Abelson (1977) a schema can represent a situation or a series of events such as doing laundry or going to the movies. In this case, the term "script" refers to the "predetermined, stereotyped sequence of actions that defines a well known situation" (p. 41).

According to schema theory, there needs to be a union between the text and the reader's background knowledge in order for comprehension to occur. Specifically, "every input is mapped against some existing schema and all aspects of that schema must be compatible with the input information" (Carrell and Eisterhold, 1988, p. 76). This process of matching incoming information to previously acquired knowledge structures also involves a set of both bottom-up and top-down processes. Top-down processing takes place as the reader makes inferences based on schemata and scans the input for information to match the partially satisfied, higher order schemata. Similarly, bottom-up processing "is evoked by the incoming data; the features of the data enter the system through the best fitting, bottom-level schemata" (p. 76).

To illustrate the effects of schemata, background knowledge, and simultaneous bottom-up and top-down processing, Carrell and Eisterhold (1988) offer the following example: "The policeman held up his hand and stopped the car" (p. 77). While there are many possible schemata related to this sentence, a reader is likely to make the following assumptions while attempting to comprehend this short passage: the car has a driver, the policeman signals for the driver to stop, the driver applies his brakes and stops the car. However, given different background knowledge, different interactions between specific

top-down and bottom-up processes, and the activation of a different schema, interpretation of this text would be very different. For example, imagine that the car has no driver and the man is Superman. In the Superman schema, the holding up of the hand is no longer considered to be a signal to a driver to stop the car, but it is likely to be interpreted as a physical stopping of a driverless car by Superman's hand. If a reader encounters an inconsistency between bottom-up information gained from the text and top-down predictions, a new schemata must be activated and a new interpretation will arise, as in the car stopping examples above (Carrell and Eisterhold, 1988). The selection of a particular form of a schema out of many is referred to as instantiation.

THE BACKGROUND AND CULTURE BARRIER

In addition to bottom-up linguistic difficulties, such as being unfamiliar with a particular word or grammatical structure, there may be several top-down reasons why a reader may be unable to comprehend a given text. For example, the reader may not have the relevant content schema available to access; the reader may have the appropriate schema but is unable to access it due to insufficient clues in the text; or the reader may have used an incorrect schema to "mis"comprehend the text (Rumelhart, 1977; 1980). A major reason for the inability of second language readers to access the correct content schema is the fact that they often lack the appropriate schema and the specific cultural background knowledge necessary for comprehension.

Alderson and Urquhart (1988) designed a study to examine the effects of an ESL student's background discipline — his or her top-down knowledge of a particular academic field — on reading comprehension. They hypothesized that a student of engineering would perform better on an engineering text than would a student of economics, even if the general level of ESL proficiency was the same for both students. Alderson and Urquhart proposed that "if readers bring their background knowledge to the comprehension process, and this knowledge is bound to vary from reader to reader, then there can be no single text-bound comprehension, but rather a host of comprehensions" (p. 169). Alderson and Urquhart examined four groups of students from different academic disciplines who had just completed the same English Study Skills. All students were then given five reading texts matched in terms of linguistic complexity, sentence length, and word length in syllables. Two of the texts were on engineering topics, two were related to economic development and finance, and one text was designed to be general. Results of a reading comprehension test supported the original hypothesis that "students from a particular discipline would perform better on tests based on texts taken from their own subject discipline than would students from

other disciplines. That is, there appears to be an advantage to taking a test on a reading text in a familiar content area" (p. 174). In a similar study, Levine and Haus (1985) found that English-speaking students who were interested in baseball were able to answer questions about a Spanish baseball article significantly better than English-speaking students who knew little about the topic.

In a 1987 study, Markham and Latham found that top-down cultural knowledge affected participants' comprehension. This study involved sixty-five university-level ESL students, of which twenty were Christian, sixteen were Moslem, and twenty-eight claimed to have no knowledge of either religion. Markham and Latham found that the Christian students outperformed all other students on an oral exam while testing a passage related to Christian prayer. Similarly, the Moslem students outperformed the other students on a passage related to Islamic prayer. Finally, both the Moslem and the Christian participants produced higher scores than religion-neutral students in terms of total recall scores for both passages.

In light of numerous studies demonstrating the positive effect of relevant cultural information on reading comprehension (Alderson and Urquhart, 1985; Levine and Haus, 1985; Markham and Latham, 1987) many researchers and methodologists have concluded that "cultural content may and must be taught" (Barnett, 1989, p. 45). Cultural content can be taught through illustrations, titles, and pre-reading activities such as discussion, vocabulary work, and brainstorming. According to Barnett (1989) prereading activities help students comprehend reading passages by involving the student in the text, eliciting or providing appropriate background knowledge, and activating necessary schemata.

Omaggio Hadley (1979) studied the effect of teaching context-specific information, in the form of visual advanced organizers, on reading comprehension of French passages by English speaking students. Omaggio Hadley acknowledges that second language learners are "often faced with input material... that is by nature unfamiliar, difficult, and therefore unpredictable because of the learners' lack of familiarity with the linguistic code" (p. 139). Furthermore, she hypothesizes that the provision of "additional [top-down] contextual information in the form of visuals should make the comprehension task easier by providing an organizational scheme for the passage as a whole (e.g., appropriate background knowledge or schemata would be activated" p. 140).

By providing an organizational scheme for an L2 reading passage, Omaggio Hadley is in essence teaching contextual information and cultural content (Barnett, 1989; Markham and Latham, 1987; Omaggio Hadley, 1979) and allowing students to "activate appropriate background knowledge or schema" (Omaggio Hadley, p. 140).

SCHEMATA AND BACKGROUND KNOWLEDGE VERSUS CONTEXT; WHAT IS THE DIFFERENCE?

Simply because a passage, a story, or even a grammatical exercise has a context does not necessarily imply that the reader, listener, or student is able to comprehend the context supplied. For instance, in the aforementioned 1987 study by Markham and Latham, every participant was exposed to the same two stories, and therefore was supplied with the same contextual information. Researchers in this study found that what permitted some students to perform better than others on a comprehension and recall task was not the context, which was equal for all participants, but rather the personal information, or the background knowledge, brought to the text by certain readers. For example, the Moslem readers in this study knew more about the passage dealing with Islamic prayer practices than did the readers professing a Christian heritage.

In addition, prereading and prelistening activities, which have been shown to facilitate reading and listening comprehension (Phillips, 1984; Shrum and Glisan, 1994), do not alter or add to the context of a reading or listening text. Rather, prereading and prelistening activities allow the reader and listener to build and/or retrieve appropriate schemata from memory to aid in the comprehension of a text (Omaggio Hadley, 1979; Phillips, 1984). According to Phillips (1984), prereading and preparation activities help the reader develop skills in anticipation and prediction for the reading of graphic material.

Although very similar, context is the circumstance, environment, and setting created by the author of a text or an exercise, whereas background knowledge is the circumstance, environment, and setting brought to the text or task by the student.

CONCLUSION

This article has reviewed the three types of first-language reading models that have had the greatest impact on second language research and methodology. Although the inchoate first language models have been adjusted to account for second language variables such as target language (Eskey, 1988), their impact in second language reading research can not be denied. Clearly, the second language teaching profession's recent emphasis on the learner, rather than on normed language, welcomes the transfer of top-down and interactive models of the reading process from the realm of first-language research. Similarly, schema theory, which originated in the cognitive sciences and flourished among first language reading researchers, is proving beneficial to the second language reading teacher and researcher by accounting for additional cross-language cultural variables.

The sharing and transfer of knowledge among related disciplines — cognitive science to first-language reading, and first-language reading to second-language reading — must be strengthened and varied in direction of flow. As first-language models of reading have influenced second-language reading theory and research, so might an understanding of how these models are being employed in other disciplines enrich the first-language researcher and teacher.

An important relationship exists between first- and second-language research and needs to be explored by both parties. Indeed, first language reading researchers and theorists may want to consider the implications that their research will have within the realm of second language reading. Similarly, second language researchers may want to review, and perhaps replicate, first language reading studies. Finally, and most important, because we all strive for a common goal, the improved reading comprehension of students of all ages and in all target languages, collaborative projects investigating both first- and second-language reading, and involving researchers from each field, must be undertaken.

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Is It Just Me, Or Are There Other Parents and Teachers Out There Confused About SOL Reading Assessments?

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ABSTRACT

This article describes an incident involving the author, his daughter, and sample items from a Standards of Learning assessment. The author uses this incident to describe his increasing confusion with SOL assessments, especially in the area of reading, and proposes that educators spend less time “testing our kids” with SOL assessments, and more time “testing their theories” so that assessment better reflects recent advances in reading and learning theory.

In this book a number of dialects are used, to wit: the Missouri Negro dialect; the “extremes” form of the backwoods Southwestern dialect; the ordinary “Pike County” dialect; and four modified varieties of this last. The shadings have not been done in a haphazard fashion, or by guesswork; but painstakingly, and with the trustworthy guidance and support of personal familiarity with these several forms. I make this explanation for the reason that without it many readers would suppose that all these characters were trying to talk alike and not succeeding.

Mark Twain
The Adventures of Huckleberry Finn (1997)

INTRODUCTION

The purpose of this article is to raise questions and concerns about the increasing use of Standards of Learning (SOL) testing as a tool to assess reading comprehension. It is intended to promote reflective thinking about reading assessment, as well as start some new conversations about the development of assessment procedures that best reflect recent advances in reading.

I begin by sharing a recent incident involving my daughter, myself, and sample items from a Standards of Learning assessment

test. Next, I use this incident to describe my increasing confusion and concern with this type of assessment, especially in the area of reading. Then, I discuss the notion of assessment as inquiry as an alternative view that can support both student and teacher growth. I end by describing why we need to spend less time testing our kids on reading, and more time testing our theories about reading.

BACKGROUND

As a parent and a teacher, I am both concerned and confused about the increasing use of Standards of Learning (SOL) reading assessments in educational evaluation. My concern was heightened after recently reading *The Adventures of Huckleberry Finn* with my daughter.

One of the most appealing characteristics of this story is that Mark Twain creates a cast of unique characters, e.g., Huck Finn, Becky Thatcher, Aunt Polly, and Injun Joe, who speak different dialects but nonetheless succeed at communicating quite well with each other. While reading, it occurred to me that these characters, while not real, are in some ways both like and unlike real educators today.

Schools are influenced by a variety of stakeholders including school administrators, building principals, curriculum specialists, guidance counselors, classroom teachers, parents, and students. Typically, these stakeholders hold different perspectives and agendas, and therefore speak very different discourses on schooling, curriculum, teaching, learning, and assessment. That is, each of these stakeholders use different discourses to describe different educational problems and propose different educational solutions. To be sure, these individuals try to talk to each other, but, unlike Twain's characters, are not necessarily succeeding all that well. No where is this lack of communication more evident than in recent efforts to develop and implement SOL assessments. In fact, based on a recent personal experience, I've come to believe that SOL assessments quite possibly are sending confusing, even contradictory, messages to parents, teachers, and children in the area of reading.

SOL ASSESSMENTS

SOL assessments are currently being developed and implemented at both the state and national levels. Typically, these assessments are administered to students in grades 3, 5, 8, and 11 across academic disciplines such as English, Mathematics, History, Science, and Social Studies. The proliferation of SOL assessments appears to be a response by the test-making industry to the concerns of a variety of educational stakeholders at many different levels (politicians, business leaders, school administrators, curriculum coordinators, building principals, teachers, parents, and students) who believe, based on

national and state testing results, that public education is in serious crisis, especially in the area of reading (Eisener, 1982; Applebee, et.al., 1988; Langer, et.al., 1990; National Assessment of Educational Progress, 1994; Humphrey, 1992).

The crisis in public education is often described in terms of academic standards. The concern is that academic standards don't exist, or when they do, they are set so low that they have become virtually meaningless. In response, many advocates of education reform have proposed a wide range of solutions including: 1) raising academic standards; 2) getting back to basics; 3) holding teachers and schools more accountable; 4) requiring continued professional development; 5) rewarding teachers and schools for increasing student scores on standardized tests; and 6) developing and implementing SOL assessments. Of these, increasing numbers of educators believe that developing high Standards of Learning and implementing rigorous SOL assessments are the keys to educational reform. The rationale is that standards of learning set clear and concise expectations for what teachers should teach and what students should learn, and SOL assessments provide a benchmark for measuring student performance and achievement (Virginia Standards of Learning, Field Test 1997).

PERSONAL EXPERIENCE WITH SOL ASSESSMENTS

Recently, I had a personal experience with SOL assessment. This incident involved my daughter and a booklet containing SOL assessment sample items. My daughter's name is Ferris, and at the time of this incident she was in the eighth grade. One day she came home after school, and before I could even say, "Hi, Ferris, how was school today?," she pulled a booklet out of her backpack, and said, "Here, this is for you. My homeroom teacher said that it's about some test that all eighth graders are going to take next week. Parents are supposed to read it." She handed me the booklet, and went directly upstairs to her room, without snacks or homework, presumably to talk on the phone (I've learned that many eighth graders believe that after school is a time for them to talk at home to the same people they have talked to at school for much of the day). Sensing I wasn't that welcome upstairs for a while, I stayed downstairs in the kitchen and started to read the booklet.

Basically, the booklet was an introduction to the standards of learning test that was scheduled to be field tested the following week with students across the school district in grades 3, 5, 8, and 11. In the introduction it explained that the purpose of field testing is to test the test by trying out questions before they are used on future SOL tests, and that the field test will ensure that test questions are well written and fair to all students. Later, it went on to explain that the aim of the booklet was to provide sample test items to help you (teachers and parents) understand the format of the test your student will take. What

it didn't explain was who actually wrote this booklet. So, I caught myself asking: Who were the authors of this document? Were they educators in the state department of education? Commercial publishers? Testing specialists? University psychometricians? Were any parents or teachers involved in the development of this test, especially teachers in the specific content areas that were being assessed? Did teachers have any opportunity to review the test prior to administering it to students? Is this the way other states are conducting field-tests of SOL sample tests? I wasn't sure.

I sat at the kitchen table and started to browse more thoroughly through the booklet. It was organized according to different grade levels and content areas. I first turned to the sample items in Grade 3 — English, and saw a prompt that read “Grade 3 questions will cover the English SOLs for kindergarten and grades 1, 2, and 3.” This prompt was followed by a short passage entitled *Nick's Cat*.

This story is about a little boy who discovers one day that his cat, Manka, is missing. With his parents the little boy tries to find Manka by searching the neighborhood, hanging up posters, and asking neighbors if they have seen the cat. One day a new neighbor, an elderly man named Mr. Goldman, visited Nick's house saying that he saw Nick's poster about a missing cat. He explained that a cat had moved into his shed to have her kittens recently, and the cat just might be Manka. Nick, his mother, and Mr. Goldman went to the shed and found Manka.

This passage totaled 278 words and was divided into nine paragraphs, with each paragraph averaging approximately 31 words (longest paragraph = 42 words; shortest paragraph = 5 words). Each paragraph was numbered “for the student's reference.” The following prompt was provided after the passage: “Read this part of a sentence from paragraph three in the story.” This prompt was followed by two multiple choice questions:

1. Nick's mom helped him make posters ...

Which word has the same vowel sound as make?

- A. march
- B. beak
- C. rain
- D. snack

2. This story is mostly about —

- F. where mother cats like to have their kittens
- G. how a boy tries to find his missing cat
- H. how a boy meets one of his neighbors
- I. how important it is to be a good neighbor

I then turned to the sample items in grade 5 — English (Reading/Literature and Research). Like the grade 3 section I saw a prompt that read “Grade 5 questions will cover the reading/literature

and research SOL's for grades 4 and 5." This prompt was followed by a short passage entitled *Better Than a Barn Raising*.

This story is about a time when a barn on Mr. Zook's farm had been hit by lightning and burned to the ground. One day the following week some of the neighbors, including a father, mother, and their two older sons, went to Mr. Zook's farm to work at raising a new barn. The youngest son, Aaron, was left behind with his grandpa so they could care for Daisy, Mr. Zook's mare who survived the fire and was ready to give birth to her foal. That same day Aaron noticed something wrong with Daisy. Grandpa told him that there was nothing wrong, but that Daisy was getting ready to give birth to her foal. Together, Aaron and his grandpa helped Daisy give birth to a beautiful colt that looking just like Daisy.

This passage totaled 485 words and was divided into 11 paragraphs, with each paragraph averaging approximately 44 words (longest paragraph = 77 words; shortest paragraph = 20 words). This passage was followed with a multiple choice question.

1. Aaron did not go to the barn raising because —
 - A. someone needed to stay at home with grandpa
 - B. he hadn't finished the chores he had been given
 - C. he was not old enough to help rebuild the barn
 - D. there weren't enough horses for the whole family

Finally, I turned to the sample items in grade 8 — English (Reading/Literature and Research). Like previous sections I saw a prompt that read "Grade 8 questions will cover the reading/literature and research SOL's for grade 6, 7, and 8." This prompt was followed by a short passage entitled *A New Naval Strategy*.

This story is about John Hawkins, an English sea commander, who created a new naval strategy for fighting ships to use in sea battles during the 16th century. Typically, grappling hooks were used to hold two ships next to each other while soldiers boarded enemy ships and won the battle. Hawkins believed this maneuver was too risky, and devised a strategy whereby ships were built lighter and faster and equipped with canons. With these ideas, he built a new navy for Queen Elizabeth. Later, this navy succeeded in defeating the Spanish armada sent by Philip II of Spain to conquer England.

This passage totaled 313 words and was divided into four paragraphs, with each paragraph averaging approximately 78 words (longest paragraph = 93 words; shortest paragraph = 64 words). This passage was followed with a prompt and a corresponding multiple choice question.

The chart shows some of the important ideas in the article.

How 16th Century Sea Battles Were Fought
Hawkins Rebuilds the Queen's Navy
British Navy Fights the Spanish Armada

Which of these ideas belongs in the empty box?

- A. Cannons Are Used on Queen's Ships
- B. Queen's New Navy Put to the Test
- C. Hawkins Considers Possible Changes
- D. Spanish Armada Sent to England

I'M JUST CONFUSED

Although the intent was different, after reading through this booklet I felt more confused than ever. In particular, I felt confused about the following:

Grade 3 Sample Items

What is the purpose of asking the question, "What word has the same vowel sound as make?" What relationship does it have to the story, *Nick's Cat*? How does reading the story better enable children later to answer this question correctly? In actual fact, children really don't even have to read this story, or any story for that matter, to answer this question. So what's the point? I suspect the purpose of this question is to test phonemic awareness. If so, then let's say so. Let's at least be intellectually and theoretically honest with teachers and parents by saying that the intent of this item, and others like it, is to assess ability to recognize individual words and understand sound/letter relationships.

Now, it seems to me that these items are useful but only if reading is conceptually and operationally defined primarily as a process of decoding text. However, if reading is defined as the process of creating personal meaning from text, I'm left wondering: 1) what definition (or definitions) of reading is driving SOL assessment?; 2) what messages does this testing definition send to students and teachers about what reading is and what it isn't?; and 3) what is the primary purpose of SOL assessment? Is it to assess the ability to decode, create meaning, or both? At issue might be the difference often made between reading (decoding) and reading comprehension (creating meaning). For me, the two terms, reading and comprehension are synonymous, but often aren't perceived or defined that way, especially by students. Perhaps this distinction partially explains why many students, especially in junior high and senior high school, who experience difficulties in reading are the same individuals who define reading as an act of recognizing words rather than a process of

creating, connecting, and integrating ideas (Bintz, 1997). To what extent does reading assessment perpetuate this perception?

Moreover, how does asking children to answer the question "This story is mostly about _____" use assessment in a way that best reflects recent advances in reading theory? It seems to me that, if anything, it reflects just the opposite, and as a result sends confusing and conflicting messages about reading to teachers, parents, and students. Many educators, especially reading educators, all too often tell teachers to teach critical thinking, create reading experiences for students where the focus is on meaning, support students to explore multiple interpretations of literature, provide students' opportunities to discuss the books they read, and help them to make connections between different texts and different content areas. But then educators turn right around and use assessment procedures which test just the opposite.

For example, how does asking children to answer a single question with a single answer (and not any single answer, but the single right one, selected from a predetermined pool of possible single right answers) reflect what we tell teachers they should be teaching students to do in the classroom? I suspect it doesn't. Therefore, I believe that we might be sending mixed, even contradictory, messages by using tests that assess children in isolated areas of reading which we tell teachers not to teach in isolation. How do we explain this apparent contradiction? Perhaps even worse, are we even aware that this is a contradiction?

Grade 5 Sample Items

If SOL assessments are designed to "set clear and concise expectations for what teachers should teach and students should learn," then what expectations are being communicated to teachers about what they should teach about reading and to students about what they should learn about reading through sample items such as these? Stated differently, what messages about reading are we sending by asking students to read a short passage and then identify single right answers to multiple choice questions? Are we communicating that reading is simply a process of finding single answers, and involves little, if any, critical, inferential, or reflective thinking? Are we using SOL assessments as a means to get teachers to uniformly embrace, endorse, and perpetuate this view of reading? Are we holding teachers accountable for the extent to which they are successful at training students to correctly answer multiple choice questions? If so, how do we explain, much less reconcile, the fact that these messages hardly reflect the best we currently know about reading?

For instance, according to the booklet, the correct answer to the sample item question "Aaron did not go to the barn raising because —? is, C: "he was not old enough to help rebuild the barn." Out of curiosity, I asked my daughter later that night to read the passage and

tell me what she thought was the correct answer. After reading, Ferris shrugged her shoulders, and rather nonchalantly stated: "Of course, C is the answer." "Why C, Ferris?", I responded. "Because it says so right in the text. Didn't you see that?" she said. "Where?", I asked. She pointed to the passage, and said, "Right here in paragraph 5. See, it says 'There'll be plenty of barn raisings for you when you are older.' That's the answer. How could you not see that? The answer was right in the text. They're always in the text. You just have to find it. All these tests are like that."

How do we expect students, like my daughter, to become critical readers when we use tests that require just the opposite? Why does such a chasm exist between recent advances in reading theory and reading assessment? Why don't we at least get our theoretical acts together by making our theoretical positions, our instructional practices, and our assessment procedures on reading more theoretically consistent? At present, using these sample items make us look more theoretically eclectic than theoretically consistent when it comes to the relationship between reading instruction and reading assessment.

What kinds of messages, then, should we be sending to teachers, students, and parents about reading? First and foremost, whatever messages we do send should at least reflect the best we currently know about reading. For instance, we know (and have known for some time now) that reading is a very complex process involving the personal construction of meaning through texts. We know that reading is strategic in that readers use a variety of strategies before, during, and after reading to create and recreate meaning. We know that some of these strategies include, but are not limited to, making personal connections, accessing and using background knowledge, constructing and testing out hypotheses, detecting anomalies, dealing with ambiguity, entertaining alternative interpretations, tinkering with possibilities, and evaluating explanations. Where are processes such as these being incorporated into SOL assessments? I'm not sure. I suspect, however, that having children provide single answers to single closed-ended questions might be sending conflicting, if not contradictory, messages about reading. How does answering multiple choice questions in any way afford children the opportunity to experience what strategic readers really do when they read? How do we ever expect to create strategic readers if the strategy we value most is simply the ability of students to find single answers to what they all too often perceive as "unimportant questions" (Routman, 1998)?

Grade 8 Sample Items

After reading through this section, I found myself making some connections across sample items and grade levels. One connection was that these sample items are sending messages to students and teachers not only about reading, but also about learning. For example, what kinds of messages is the question "Which of these

ideas belongs in the empty box?" sending to teachers and students about learning when we: 1) identify for them some of the important ideas in the passage; and 2) ask students to select correct responses from a pool of ideas somebody else has already created and already decided are important in the passage. With respect to reading, what messages are we sending to teachers and students about the nature of reading and the role of the reader? Aren't we saying that reading is little more than finding important ideas presumed to be inherent in the text? Aren't we saying that reading comprehension is little more than choosing between ideas others have already identified are important? If not, what are we saying? We say we want critical readers, then don't we have to allow readers to read critically? At the very least don't we have to allow test-takers, not test-makers, the opportunity, much less the right, to decide what ideas are important in a text and what are not?

But reading isn't the only problem. With respect to learning, what messages are we sending to teachers and students about the nature of learning and the role of the learner? Are we saying that learning is simply a matter of identifying and understanding discrete pieces of information? What else could we be saying when we ask students to fill in empty blanks with other people's understandings and ideas? If we're not saying this, what are we saying? Moreover, what are we saying about the role of the learner? What are we saying about who is in control of learning, test-makers or test-takers? If test-makers, how can students feel any ownership in and control of their own learning? If we believe (as I do), that nobody becomes literate without personal and active engagement in the process, then how do SOL assessments support students in this process? If they don't, how do we defend these assessments, philosophically, theoretically, intellectually, and even ethically? I'm not sure.

ASSESSMENT AS INQUIRY

At the beginning I admitted that I was confused about SOL assessments. Unfortunately, I still am. However, I don't feel as confused about some other related issues. For instance, I don't contend that the booklet discussed here is a unique, one of a kind phenomenon. Rather, it represents only one state's recent, and I might add well intentioned, attempt to develop, refine, and implement an SOL assessment that is valid, reliable, and useful. In actual fact, many other states are engaged in the same or similar process, most notably perhaps the Commonwealth of Kentucky which is currently implementing KERA (Kentucky Education Reform Act) I. Moreover, I suspect that other state-wide SOL assessments operate on many of the same assumptions about learning and reading as does the one I have described here. In many ways they have to share similar assumptions and use similar

testing formats (multiple choice) in order to make both within state and across state comparisons of student performance.

In addition, I don't feel confused about supporting high academic standards for students and teachers. Unfortunately, the issue isn't that simple. Educational reform isn't just about raising standards. Raising standards upwards, although a good start, is a one-dimensional response to a multi-dimensional problem. Height is only one dimension. But we don't live in a one-dimensional world; we live in a three-dimensional world, maybe even four or more. Therefore, one-dimensional standards are not very powerful or very useful in a multi-dimensional world.

What is certainly more powerful and potentially more useful are academic standards that are three-dimensional in nature; that is, standards that have depth and breadth as well as height. If we want students to achieve high academic standards, we have to do a better job at: 1) increasing the height of standards so that students can stretch themselves upward intellectually into different areas not previously considered; 2) broadening the scope of standards so that students can stretch themselves sideways intellectually in order to make connections and see patterns between different academic disciplines; and 3) deepening the view of standards so that students can stretch themselves intellectually by having opportunities to take reflective stances on their learning. I suspect students will achieve high academic standards only when they perceive them as worth pursuing. My hunch is that the only standards worth pursuing are the ones that have height, depth, and breadth. The problem will be to what extent can SOL assessments be developed that can accommodate three-dimensional academic standards.

In addition to academic standards, I don't feel confused about supporting assessment. Assessment isn't just important in education; it's critical to promoting good teaching and enhancing good learning. All too often assessment is seen as a standardized tool for verifying student learning. This is consistent with a one-dimensional view of academic standards. But a different view of assessment is required to accommodate standards that are three-dimensional in nature. One view is seeing assessment as inquiry.

Here, assessment is a tool for inquiring into and supporting student learning. It is a view that sees teachers as inquirers, learners, and reflective practitioners in the classroom. This view also sees all assessment as basically a process of self assessment. For students, this means assessment is a tool to better understand and reflect on what they have learned, how they learned it, and what they want to learn more about. Simply stated, I value assessment because I see it as a tool teachers and students can use to outgrow what they currently know about the complex nature of learning.

Perhaps an example might help. Consider the following reading invitation (Harste, Short, and Burke, 1988):

Sketch-to-Stretch: After self-selecting and reading the same selection, students think about what they read and then draw a sketch of “what the selection meant to you” or “what you made of the read.” When sketches are complete, students slip the sketch over, and write a retelling of what they are trying to express in their sketch. Afterwards, students form a literature circle. Each person in the group shows his or her sketch to the others. Group participants study the sketch and say what they think the artist is attempting to say. Once everybody has had the opportunity to hypothesize an interpretation, the artist, of course, gets the last word.

First, it is important to state that this reading invitation actually blurs the distinction between instruction and assessment. That is, this invitation can function simultaneously as both an instructional strategy and an assessment tool in the classroom. Second, this invitation recognizes that nobody becomes literate without active engagement in the process, learning is a social engagement, and reading is a tool for learning. Third, unlike closed-ended and language-based multiple-choice test questions, this invitation is grounded in a multiple ways of knowing perspective and invites open-ended response to reading. And fourth, this invitation, and others like it, is a potential to support the idea of three-dimensional standards and assessment as inquiry.

For example, language is a communication system, but only one of many that humans have created and use to represent meaning. Others include art, music, dance, sculpture, improvisation, and photography to name just a few. Individuals, especially very young children, use (almost effortlessly) many of these communication systems as tools for learning as well as mediums for representing what is learned (Gardner, 1983).

SOL assessment, like many formal standardized tests, privileges language (and math) over all other communication systems. What is problematic is that readers comprehend more than what they can say in language (Gardner, 1991). Moreover, readers can often say different things depending on different communication systems. For instance, a musician might not be able to express in a short story what s/he can in a sonata; a painter might not be able to represent with clay and wheel what s/he can with oil and canvas; and a photographer might not be able to express through choreography what s/he can with photography.

Sketch-to-Stretch invites students to use art and language (oral and written) to create and represent personal meaning from text. I see art as a potential to gain both height and width on reading, a medium that enables readers, in the words of the fictional character Opus, “to depart the text” (Breathed, 1993) and represent higher and deeper

meanings. Likewise, I see language as a potential to gain depth on reading. When readers/artists discuss their sketches in literature circles, they use conversation to enhance and outgrow their current understandings of the text. They see different images, hear different voices, and start new conversations, and in the process explore alternative meanings not originally considered.

What can teachers learn about readers from Sketch-to-Stretch and other reading invitations like it? What can teachers learn about reading? What can students and teachers learn about themselves? I'm not clairvoyant, so the honest answer is I don't know. I suspect, however, that strategies such as this one enables students to take mental trips and intellectual journeys far beyond places where multiple-choice question tests traditionally allow them to go. Assessment, then, seems to be an inquiry tool to find out where they went and how they got there.

LET'S TEST OUR THEORIES MORE AND OUR KIDS LESS

Every teacher has a theory. Even the educator who cares only about practical strategies, whose mantra is "Hey, whatever works," is operating under a set of assumptions about human nature, about children, about that child sitting over there, about why that child did what she did just now. These assumptions color everything that happens in classrooms, from the texts that are assigned to the texture of casual interactions with students.

Despite their significance, such theories are rarely made explicit. No one comes out and says, "The reason I run the class this way is because I assume children are basically untrustworthy." But precisely because they have such a profound impact on every aspect of education, it is crucial to expose these beliefs and decide whether they can survive careful scrutiny. By the same token, whenever a consultant on discipline offers advice, we should hold that prescription up to the light, much as we might search for a hidden watermark on a sheet of paper. What is he or she assuming about kids — and, by extension, about all people? (Kohn, 1996).

I want to end by admitting one last confusion: Where is theory in all of this? Theory appears to be noticeably absent, or at least not given enough attention, in discussions about academic standards and SOL assessments. Why do we spend so much time creating new standards and developing new tests but, in comparison, spend so little time articulating, much less interrogating, the theory (or theories) that drive these standards and tests? Do we assume that standards and tests are theory-less in nature, and therefore exist in a theoretical vacuum? Do we also assume that the people involved in creating standards and developing tests are theory-less, too? Or do we assume that theory just

really isn't the problem, and therefore discussing theory might be interesting, but less important as creating standards and developing tests?

For me, theory is the main issue. Academic standards and SOL assessments, or any tests for that matter, are not theory-neutral. On the contrary, they are driven by implicit and explicit theories of learning and reading. The issue, then, isn't whether theory is used, but what theory is being used, and specifically what assumptions are being made about learning, learners, and readers. This is what I've tried to do in this article. I've tried not to look directly at one SOL assessment, but to look underneath it, to see what assumptions are being made about learning and learners, about reading and readers, as well as what messages these assumptions send to teachers and students.

Unfortunately, when I looked underneath this SOL assessment, I saw sample items being driven by questionable assumptions about learning and reading. Why do we use these assumptions to create new tests, and then use these tests to assess new standards? Why do we spend so much time creating tests that look new, but in terms of theoretical assumptions, really aren't? Why don't we spend more time testing our theories and less time testing our kids? That is, why don't we spend more time developing new theory and less time developing new tests. SOL assessments make testing sound different and at times even look different. But these new tests still appear to be driven by the same criteria as the tests they are replacing.

Finally, I recognize that this article is based on a single experience from a single state, and involves pilot items that may or may not actually appear later on a SOL assessment. I also recognize that not all statewide efforts directed at standards-based assessment suffer from these problems. My concern, however, is not only with the test items, but, more importantly, with the theoretical assumptions that are being used to create items such as these. And my point is that if we are going to continue testing our kids more than ourselves, then why don't we at least test them on criteria that are theoretically consistent with recent advances in reading and learning. We owe it to them, as well as to ourselves. As a parent and a teacher, I remain confused why we don't. Or is it just me?

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Children's literature: What's on the horizons

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Chapter Books

Creech, Sharon. 1997. *Chasing Redbird*. NY: Scholastic. ISBN: 0-590-55899-4. 261 pp.

Chasing Redbird is told by thirteen-year-old Zinny Taylor. A fast-paced story, it is filled with intriguing characters like Aunt Jessie who is called "Redbird" by Uncle Nate, Jake Boone who takes undo risks on Zinny's behalf, and Zinny's older sisters who are self absorbed and think Zinny is "... the strangest and stingiest dirt daubing doodlebug." Once again Sharon Creech has created a cast of characters that eludes easy description. As the story begins, Zinny has found a map detailing the Bybanks — Chocton Trail which begins on the hillside above Zinny's family's property. Zinny is determined to uncover and clear all twenty miles of it. Her fierce independence and her desire to figure things out keep the reader immersed in her story and sorry when it is over.

Fleischman, Sid. 1996. *The Abracadabra Kid: A Writer's Life*. NY: Beech Tree. \$4.95 pb. ISBN: 0-688-15855-2. 208 pp.

In this highly readable and entertaining autobiography, Sid Fleischman narrates his life story. He begins with his childhood desire to be a magician. The story is told in forty-three two to six page chapters each illustrated with a photograph depicting the time he is describing. Each chapter also begins with a headnote which contains a comment or a question from a reader. While he does not answer these directly, they offer a frame for the information in the chapter. For example, Chapter 16 "Expert at the Card Table" about his mother's days of playing poker begins with the following headnote: "Your book would make a movie or a soap opera. Do you think you could use our class? Let's do lunch." Chapter 24, "Life Among the Floating Mines" begins with the reader's question, "My uncle was in the war. Did you know him?" In this chapter he talks about his experiences aboard ship during WWII.

Griffith, Helen V. 1998. *Dinosaur Habitat*. Illustrated by Sonja Lamut. NY: Greenwillow. \$15.00 hb. ISBN: 0-688-15324-0. 112 pp.

Suspenseful, interesting and humorous, *Dinosaur Habitat* offers young readers an accurate look at the world of dinosaurs through the direct experience of twelve-year-old Nathan and his brother, eight-year-old Ryan as they are magically transported into the world of Ryan's terrarium. The story begins with Nathan's frustration at having to baby-sit his younger brother now that his mother has a new job. However, it is Ryan who, through his knowledge of the dinosaur world enables his brother and himself to skillfully negotiate their adventure.

Hurwitz, Johanna. 1998. *Faraway Summer*. Illustrated by Mary Azarian. NY: Morrow Junior Books. \$15.00 hb. ISBN: 0-688-15334-8. 112 pp.

In this work of historical fiction, Hurwitz relates the story of Dossi Rabinowitz who, through the Fresh Air Fund program (began in 1877 and still in existence), is able to leave her crowded tenement in New York City and spend a week in the rural town of Jericho with a Christian family named Meade. The year is 1910 and Dossi, a young Jewish girl, is at first uncertain about her good fortune. Her host sister Emma is also unsure about the wisdom of the program. The story is told by Dossi through letters home, a diary she keeps, and direct narration. *Faraway Summer* depicts the very human side of diversity and shows the strength of true friendship.

Stevenson, James, 1998. *Popcorn*. Illustrated by James Stevenson. NY: Greenwillow. \$15.00 hb. ISBN: 0-688-15261-9. 64 pp.

In this collection of 32 poems, Stevenson uses both words and illustrations to bring to life in the reader's mind's eye and heart a variety of everyday things. "Popcorn" is stored in huge brown boxes. "The Mack Truck and the Shovel" are "neighbors in the weeds" who reminisce about "the old days." "At Last" the dogs in the back seat get "to drive." This delightful volume of poems makes the ordinary new and stirs the imagination.

Picture Books

Cole, Henry, 1998. *I Took a Walk*. NY: Greenwillow. \$15.00 ISBN: 0-688-15115-9. 20 pp.

Through both illustration and text, *I Took a Walk* depicts a variety of environments and the plants and animals which inhabit each one. Each environment is shown in a five-page spread including a

fold-out page. The environments are related to one another as the reader first enters the woods, walks through a meadow, follows a stream, and finally comes to the banks of a pond. On the last page of the book all four areas are shown with each of the plants and animals labeled and listed.

Coleman, Evelyn. 1998. *To be a Drum*. Illustrated by Aminah Brenda Lynn Robinson. Morton Grove IL: Albert Whitman & Co. \$16.95 hb. ISBN: 0-8075-8006-6. 32 pp.

In this beautifully illustrated book of mixed media rag paintings by Brenda Lynn Robinson, Evelyn Coleman tells the story of the enslavement of Africans whose descendants are now African Americans like Daddy Wes, Mat and Martha. In Africa, "The earth's heart beat out the rhythm of all there is. We listened — and sounded the rhythms back for her. With the drums we spoke to the animals and to the people."

Narrated by Daddy Wes, who tells the story to his children Mat and Martha, the story emphasizes the strength and magnificence of this spiritual connection with the earth and how even with their drums taken and destroyed, the people could make, " ... our feet drums, ... our mouths drums, ... our speech drums, ... our hands drums." And, how while fighting for their freedom, they made "... our minds drums, ... our communities drums, ... our art drums." It ends with Mat and Martha listening to the earth's rhythm confirming that they, too, are free and can "Become a drum."

Harber, Frances. *The Brothers' Promise*. Illustrated by Thor Wickstrom. Morton Grove IL: Albert Whitman & Co. \$15.95. ISBN: 0-8075-0900-0. 32 pp.

This book is a retelling of a story in the Talmud about the promise two brothers make to their dying father to share everything equally and to watch over one another. It takes place in Eastern Europe around the turn of the century. Though the brothers are very different, they keep their promise, and each thinks of the other and shares what little they have during a severe drought. As witness to this goodness, the heavens open with tears of joy. The oil on board paintings add depth and richness to this warm and happy tale.

Russo, Marisabina. 1998. *When Mama Gets Home*. NY: Greenwillow. \$15.00 hb. ISBN: 0-688-14985-5. 32 pp.

This is a family story told through the eyes of the youngest of three children whose mother works outside the home. The story begins just before Mama gets home as the children are beginning the preparations for dinner and ends with the narrator's bedtime. The gouache paintings add a great deal to the story as the illustrations tell

us that the story is set in an apartment in a busy city. A simple yet realistic story, *When Mama Gets Home* will warm the hearts of all children (and adults) who read it.

Ryder, Joanne. 1997. *Winter White*. Illustrated by Carol Lacey. NY: Morrow Junior Books. \$16.00 hb. ISBN: 0-688-12992-7. 32 pp.

In this arctic tale of friendship and tradeoffs, fox and lemming trade the sun and mosquitoes for darkness and snow. They make this trade with a large bear who calls himself Winter. The stranger turns fox and lemming white so the other animals will know who to thank for the darkness and the snow. Due to the others' displeasure, fox and lemming again seek out Winter to make a new trade. They find that Winter is willing because the constant sun has made it hard for him to sleep. Known for her wildlife paintings, Carol Lacey's illustrations add both realism and charm to this tale of trickery and problem solving.



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