



# Reading Horizons: A Journal of Literacy and Language Arts

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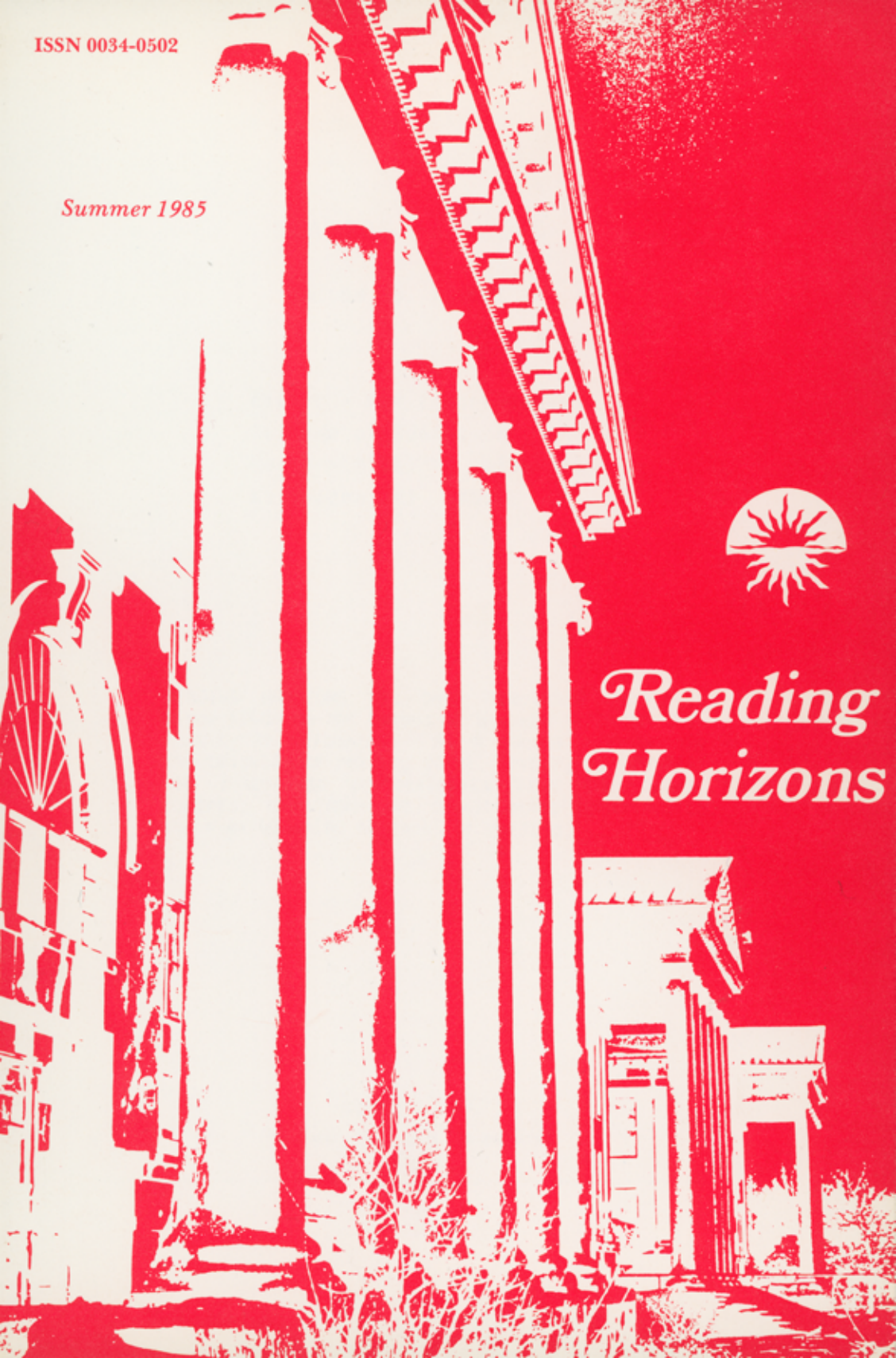


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# *Reading Horizons*





# READING HORIZONS

Volume 25, Number 4

Editor - Ken VanderMeulen  
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Western Michigan University  
Kalamazoo, MI 49008

READING HORIZONS has been published quarterly since 1960, on the campus of Western Michigan University in Kalamazoo. As a journal devoted to the teaching of reading at all levels, it provides all interested professionals with the ideas, reports, and important developments constituting the ever widening horizons of reading.

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# THE READING/WRITING LAB: A FIRST-AID STATION FOR EVERY SCHOOL

Sandra K. Pitts  
University of Albuquerque

In the fall of 1981, Loretta (real student, but fictitious name) came to the University of Albuquerque as a freshman from nearby Zuni Pueblo. Her placement procedure included the Nelson-Denny Reading Test, Form C, and an essay on the assigned topic, "My Worries About College." Reading scores indicated a vocabulary level of 8.7 and a comprehension level of 9.2. Her placement essay opening paragraph read as follows: "One big problem and worry I'am up against is money. By money, I mean will I have enough and will it cover my cost of schooling. I know that everything is so high price and that concern me even more."

By the second week in December, Loretta's reading scores showed 11.3 vocabulary and a 13.5 comprehension level. Her English class essay for the week opened with--

"Every day I encounter surprising events that add to my happiness. Even a small, unimportant encounter with an unfamiliar dog can bring me happiness. However, my happiness is not complete. For the time being, the ways to increase my happiness would include owning a car, having a regular income, and being a part of my boyfriend's activities."

Loretta was not nominated for a Pulitzer Prize in 1981, but she was on her way toward some mainstream freshman courses.

Having entered the University under its policy of open admission, Loretta spent one full semester in non-credit basic skills classes: English, math, speech, and logic. In her second semester, she had two non-credit refresher courses (English and algebra) and two regular freshman courses. Without a policy of open admission, Loretta would never have been able to seek a post-secondary education. Without the academic support services available, she would not have survived.

The academic support services at the University of Albuquerque include a tutoring center and reading/writing lab. Both are located in the campus building where all basic skills and most freshman core classes meet. The tutor-

ing center is staffed by professional and peer tutors whose majors include most of the disciplines offered at the University. Two specialists in reading and writing (a Ph.D and an M.A.) operate the reading/writing lab with the help of one part-time professional tutor (Ph.D) and one undergraduate peer tutor.

We first met Loretta when she came for the general lab introduction with her English 100 class during the first week of the semester. Like most of her basic skills classmates, she was a victim of low income background, academic underpreparation, low achievement, and cultural or linguistic isolation. A higher education had never been included in her earlier ambitions, and she had serious doubts about her ability to handle the challenge. As with all lab introductions, the reading specialist spent the first half hour assuring the students that, with lab assistance, they would be successful--if they spent all their free time in the lab. We gave each student his/her individual reading program, a two-page study plan, locating all of the material available in the lab so that no student need be lost. We check levels and materials for initial remediation based upon Nelson-Denny reading test scores and add to these as each student progresses through the semester.

The first lab session is always chaotic because we are forced to race through very complex logistics: the folders, the time sheets for logging the hours, work sheets for the many programs, operation of hardware, manipulation of software, folder file location, and so forth. The end of Loretta's lab introduction prompted her to ask, as they all do, "Do you really expect us to remember all this?" Our reply is always the same--"When you come in tomorrow--and you'd better come in tomorrow--we'll go through it with you individually. With this introduction, you will at least, perhaps, be able to find the lab and your folder."

Loretta returned the following day and we began working our minor miracles with the controlled reader and with a filmstrip vocabulary program which uses new terms in contextual settings. Our first miracle was Loretta's mastery of the operation of the controlled reader after 60 minutes of instruction. The miracle of the filmstrip machine had to wait for the third visit.

By the end of the second week, the 243 students who crowded into our 45' by 24' operation that semester were able to locate most of the material they needed and were

able to manipulate most machines without inflicting serious damage. During that second week, Loretta arrived with her first graded composition and her essay analysis sheet. (See sample) Her first expository effort contained 11 fragments, 13 agreement problems, and 7 run-on sentences, in addition to several other "minor" problems. Loretta was devastated and ready to return to her Pueblo. We sat together over many cups of coffee and tackled the fragment problem on a one-to-one basis. Loretta reinforced the individual help by reviewing filmstrips on fragment in the writing skills programs. In her second composition, the agreement problems were blatant, but she had no fragments at all. Her reaction? "I guess I can learn."

Each week we solved a different writing problem in much the same manner. Between essays, Loretta pushed herself through the reading program. Because no appointments are necessary to use the lab, she simply moved in, bookbag and baggage. No material in the lab is marked by grade level, so she never knew that we had started her in fifth-grade level material to insure her meeting with instant success. The success provided Loretta with the immediate reinforcement needed to hold her to the task of reading improvement. Not much else was required for the staff to do. For most of these students, entering the University with fully developed oral vocabularies and many life experiences, the procedure to improving reading abilities is mostly to read, read, read. The staff provides the intriguing materials and machines, the warm atmosphere, and the encouragement. The students do the rest.

At mid-term, Loretta was required to read and report on a "good" novel for her English class. Her only previous exposures to fiction were Harlequin and Silhouette Romances. We recommended Steinbeck's The Pearl, one of hundreds of paperback novels donated to the lab by a grateful faculty and student organizations. Loretta was reluctant but two weeks later returned the book with the comment, "It's the best book I ever read."

We lost a few students that fall, but most stayed with us, having found a home away from the dorm. They draped themselves over our tables to study together, isolated themselves in corners to use machines, lolled on our sofas, read everything on the University announcement board checked out hundreds of texts and novels, devoured short stories from the filing cabinet collection, used lab time to arrange social engagements, were recruited for student government activities, drank thousands of cups of coffee,

and consumed hundreds of bags of popcorn from our hot air popper. Some of them were forced to leave their kids and dogs for us to babysit, only in emergencies, while they went to class. And they learned and found they were able to succeed.

We have been inspiring underprepared students like Loretta since we opened the tutoring center and labs in January, 1980. While the missions and ideals of this small, private college have changed over the last two years, the support personnel have maintained their focus--the individual needs of the students. Although the University's open admission policy is no longer in effect in this fall's catalog, students with specific areas of weakness (reading, writing, math) can be admitted provisionally into an eight week (summer) or 16-week (fall) program of intensive non-credit classes in math, science, philosophy, and written language. They are admitted to regular freshman classes based upon evaluations at the end of each program. The tutoring center and lab are still used extensively by these mostly minority students, as well as by all University students who seek assistance in specific areas such as research formats. For all, personnel help is at hand immediately whenever difficulties are encountered.

The use of the lab varies with enrollment, but the figures below, obtained from Title III quarterly reports for 1983, demonstrate how well the small staff serves many students for many hours.

<u>Dates</u>	<u>Nos. of Students</u>	<u>Nos. of Hours</u>
Jan.-Mar. 1983	154	2198
Apr.-June 1983	156	2583
July-Sept. 1983	241	3539
Oct.-Dec. 1983	172	2821

Do all of our lab students graduate? No, but many have and more will. Are all of them still in school? No. Most are, but some are in military or civil service occupations whose entry exams they could not have read, let alone passed, before they came to us. Three of our 1980 coffee drinkers are honor students in the bilingual education program and will graduate in May, 1985, as elementary teachers. One of our 1981 popcorn snackers earned a national science scholarship. Two of our 1982 sofa sprawlers are starring in the current theatre department production. One of our 1980 table drapers is earning a living as an artist of Acoma

Pueblo designs. One-third of last year's Who's Who nominees had spent a semester or more in the reading/writing lab. And Loretta? She graduated in the summer of 1984 with an Associate of Science degree in Radiography and has returned to the Zuni Pueblo to help her people.

We who work in the academic support services at the University of Albuquerque do not claim to have solved all of the problems of high-risk learners, but we do allege that without the availability of the reading/writing lab and its staff, most of our entering freshmen would not meet with success and would not continue beyond their first semester. Capable learners would have no organized program for refining their reading, writing, and research skills to higher levels of proficiency. Where else can students who are language-handicapped find someone to read to them or with whom they can "brainstorm" assignments? Where else can a student flop on a couch, munch on popcorn, become engrossed in Wuthering Heights, and have an opportunity afterwards to talk with someone who also loves Emily Bronte? We believe that our system would work anywhere--even at the secondary and elementary levels. Of course, larger schools would require larger facilities and staff, but they would prove no more expensive than the current, often unsuccessful, attempts to remedy the weaknesses in written language abilities that are plaguing our education system. A reading/writing lab in every school, where learners may drop in at any time, might be a most provident alternative for teachers who simply do not have the time for learners who require intensive individual attention. We recommend a reading/writing lab as a busy first-aid station which can provide long-term cures, as well as band-aids.

#### Sources of Materials

The Singer Company  
Rochester, NY 14603

Arista Corp.  
P.O.Box 6146  
Concord, CA 94524

Dowling's Inc.  
3017 N. Stiles  
Okla. City, OK 73105

Eye Gate Media, Inc.  
146-01 Archer Ave.  
Jamaica, NY 11435

Learning Arts  
P. O. Box 179  
Wichita, KS 67201

Barnell Loft, Ltd.  
958 Church St.  
Baldwin, NY 11510

Sci. Res. Assoc.  
155 N. Wacker Dr.  
Chicago, IL 60606

Readers Digest Serv.  
Educational Div.  
Pleasantville, NY 10570

rh-232

Name

Class

[illegible]

## DO YOU, LIKE THESE TEACHERS, VALUE READING?

Dr. Evelyn F. Searls  
University of South Florida  
Tampa

"Teachers should be buyers of one of the most important products they want to sell to the students: reading" (Smith, Otto, & Hansen, 1978, p. 76). This succinct quote encapsulates the view of virtually every reading authority who has ever written a textbook on methods of teaching reading. All are agreed that the ultimate goal of reading instruction is to produce readers who not only can read but do read, and will continue reading during the rest of their lives. Achieving this goal requires that students be taught by teachers who themselves value reading, as demonstrated by their reading habits and attitudes.

The relatively few studies in the last twenty years that have described teachers' reading habits and attitudes are discouraging. Duffey (1973) surveyed reading habits of elementary teachers in 1966 and again in 1972. Finding little change, he deplored the amount of non-reading reported by both groups. Mueller (1973) concluded from responses to an open-ended questionnaire administered to student interns and graduates (experienced teachers) that these individuals did not place a high value on either professional or recreational reading. Using a random sample of 100 elementary teachers, Cogan and Anderson (1977) confirmed that teachers did little professional reading; periodicals they did read were ones that contained ideas that could be directly implemented in the classroom (Instructor, Teacher, etc.). Finally, Mour (1977) surveying 224 graduate students (all working teachers), concluded that teachers were not avid readers of non-professional materials, and he presented evidence which supported Cogan and Anderson's findings that teacher's preferences for professional reading also favored periodicals that offered practical ideas rather than those dealing with theory and research.

For several years I have used Smith et al.'s book as the text in a graduate course, Curriculum and Supervision Problems in Reading. In addition to the quote at the beginning of the paper, they say: "The reading habits of teachers have been studied enough to validate the suspicion that reading is being taught by teachers who do not



themselves turn often to reading for personal fulfillment and enrichment. It is deplorable that many teachers in this country, especially elementary school teachers, are not reading enthusiasts" (Smith et al., 1978, p. 74). Having worked with large numbers of both pre- and inservice teachers for the past decade, I felt that these statements did not accurately reflect the reading habits and attitudes of those teachers; however, I had no data to support this opinion. Hence, I undertook the following pilot study.

As an assignment in one section of my course, I asked my students to give the following questionnaire to five elementary classroom teachers in their schools (located in four area counties). My students were also to fill out the questionnaire; all to be done anonymously. I received 64 usable questionnaires divided as follows among grade levels: kindergarten (7), grade one (16), grade two (8), grade three (10), grade four (4), grades four/five combined (2), grade five (6), grades five/six combined (2), and grade six (9). The questionnaire is presented below, complete, with the results given in terms of response percentages as well as comments on open-ended questions. As you read, try answering the questions yourself.

\* \* \* \* \*

1. Which of the following do you read regularly?

Newspapers	<u>77%</u>	Professional	
		journals	<u>52%</u>
Magazines	<u>91%</u>		
Novels	<u>68%</u>	Nonfiction	
		books	<u>36%</u>

2. Do you read for information other than that required by your job or studies? Yes 94%

If so, what do you read?

Newspaper	<u>22%</u>	Magazines	<u>42%</u>
Nonfiction books	<u>28%</u>		

3. Do you read for pleasure? Yes 95%

If so, what do you read?

Fiction	<u>68%</u>	Magazines	<u>44%</u>
Nonfiction books	<u>16%</u>		

4. Have you read a novel in the last year?

	Yes	<u>80%</u>
--last six months?	Yes	<u>75%</u>
--last month?	Yes	<u>61%</u>

5. Have you read a novel that you enjoyed so much that you recommended it to friends? Yes 72%

If so, what was it? (Almost all "yes" respondents provided the name of the novel.)

6. Do you feel "uneasy" if you don't have an ongoing reading project? Yes 43%

7. Do you always carry reading material with you when you expect to be in a waiting situation (doctor's appointment, barber/beauty shop, etc.)? Yes 60%

8. Do you always carry reading materials with you on a journey that lasts an hour or more? Yes 74%

9. Could you accept the loss of your hearing easier than the loss of your sight? Yes 87%

10. What do you like to do for recreation?

The three activities mentioned most often were: reading (87%), sports (73%), and sewing (26%)

If reading was included, where does it rank?

First 40% Second 32% Third 15%

11. Rate yourself as a reader:

Excellent 35% Good 53%  
Fair 6% Poor 0%

12. Do you feel the need to make any changes in your reading behavior? Yes 42%

If so, what? The three changes mentioned most often were: spend more time reading (46%), read a variety of materials (22%), and read faster (18%)

(Answers to the next four questions are reported separately for teachers in kindergarten-grade two (N=31) as opposed to teachers in grades three-six (N=33) in order to examine possible differences between the groups.)

13. Do you read aloud to your students? If so, how often?

	K-2 tchrs	3-6 tchrs
Yes	<u>97%</u>	<u>82%</u>
Every day	<u>67%</u>	<u>44%</u>
4 days per week	<u>03%</u>	<u>---</u>

3 days per week	<u>10%</u>	<u>11%</u>
2 days per week	<u>03%</u>	<u>19%</u>
1 day per week	<u>---</u>	<u>11%</u>

14. Do you have a period of Sustained Silent Reading in your classroom? If so, how often?

	K-2 tchrs	3-6 tchrs
Yes	<u>39%</u>	<u>55%</u>
Every Day	<u>50%</u>	<u>67%</u>
4 days per week	<u>08%</u>	<u>---</u>
3 days per week	<u>17%</u>	<u>---</u>
1-2 days per week	<u>17%</u>	<u>17%</u>

15. Do your students see you reading for pleasure or information (not related to your instructional duties)?

	K-2 tchrs	3-6 tchrs
Yes	<u>61%</u>	<u>61%</u>

16. "A fondness for reading is something that a child acquires in much the same way as he catches a cold--by effectively being exposed to someone who already has it" (Johnson, 1956, p. 123). Do you think reading can be taught effectively by teachers who do not love reading themselves?

	K-2 tchrs	3-6 tchrs
Yes	<u>29%</u>	<u>33%</u>

It is difficult to compare results across questionnaire studies because the questions are different and results are reported in diverse ways. Other investigators have summarized their data and drawn pessimistic conclusions. I here present each question with its percentages for two reasons--the first is that you should draw your own conclusions; personally, I am encouraged by these data. The second reason is that I hope reading the questions caused you to think about your own reading habits and attitudes.

I realize that this sample is probably biased in favor of reading, due to the selection procedure for the participants. However, in light of the pessimistic conclusions of earlier studies (and, for that matter, the "bad press" that education in general is receiving these days),

I welcome some favorable bias. Naturally, as a reading educator, I would have preferred teacher responses indicating that they all read aloud to their students every day, and that they all provided a daily SSR period in their classrooms; nevertheless, the percentages reported here are encouraging.

The response to the last question was the only one that disturbed me somewhat. Approximately one-third of the respondents thought that reading could be taught effectively by teachers who do not love reading themselves. However, a number of teachers questioned the meaning of the word "effectively." I believe that, if the question had been worded, "Do you think that students will learn to love reading when taught by..." the responses might have been different.

More important than the data presented here are the possible effects that the questionnaire had on those who participated and may have on readers of this article. As Mueller (1973) stated:

The point is not that teachers "should" value reading more highly than they do, but to urge teachers to confront, acknowledge and clarify their own values in this important subject. If a teacher finds, for example, that he himself views reading simply as a tool which enables him to follow written directions, pass exams, or read the headlines, he may be able to lead his pupils to value reading at least as a necessary skill to be mastered. If he finds that he has a resistance to reading anything not required, he may be able to better empathize with the reluctant reader in his classroom. Or the teacher who realizes he prizes reading, or who learns to appreciate reading through self-study, can also apply this knowledge to teaching. In any event, the teacher who has clarified his own values can help his pupils understand, accept, or possibly change their reading values (p. 205).

It is hoped that reading this article encouraged you to confront and clarify your own values with regard to reading.

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# OUT DAMNED CHART! OUT, I SAY!

Dr. Delwyn G. Schubert  
California State University  
Los Angeles

"The nurse said he was 20/20. I never dreamed Jimmy had anything wrong with his eyes. Maybe that's why he complains of headaches when he reads."

A familiar story. All too often a 20/20 rating on the Snellen Chart is accepted as convincing evidence that a Child's eyes are free from defects. Quite the opposite may be true.(1)

The Snellen Chart which has not changed since it was designed in 1862 is the only visual screening test used in practically all schools. The chart consists of rows of letters that vary in size. The largest are at the top with each succeeding row containing letters that are measurably smaller. Beside each row is a number indicating the distance from the chart that the average eye can identify letters of that size. A fraction is used to express visual acuity. If, for example, a child is able to read the 20/20 line, it means at 20 feet he reads letters designed to be read at 60 feet. The numerator of the fraction always remains 20 since it indicates the distance from the chart at which the child stands.

The Snellen Chart and the manner in which it is administered are rife with shortcomings. First of all, the test is administered at a distance of 20 feet. No information is given to tell us how well the child's eyes will function at book reading distance. Because the nurse who gives the test does so in monocular fashion, there is no assessment of binocular function. This is important. A child does not read one page with a left eye and another with the right eye. Reading is a binocular act. Other shortcomings stem from memorization of the chart and from squinting the eyelids to pass the test. This latter method is a practice helpful to the myope who is able to reduce the size of the pupil and thus temporarily improve his/her visual acuity.

Under the best of circumstances, which conditions are screened by the Snellen Chart? Unbelievably, the visual anomaly most frequently detected is myopia (nearsighted-

ness), a condition very often associated with good readers; secondarily, amblyopia (reduced vision, usually in one eye, which occurs in only 3% of the population). Except in extremely severe cases, hyperopia (farsightedness), a visual anomaly most incompatible with good reading at nearpoint, (2) escapes detection. This also is true of astigmatism and fusion difficulties which usually affect reading skill adversely. (3,4)

Because of the gross inadequacies of the Snellen Chart, thousands of children in our schools have visual problems of which parents and teachers are completely unaware. The handicaps and losses are overwhelming and the most tragic aspect of the situation is that we have the means to correct the problem. The solution is simple. Throw out the Snellen Chart! There's been a new breakthrough in visual screening! (5)

The new screening procedure is known as the Walton Modified Telebinocular Technique (MTT). It was developed by Dr. Howard Walton, Southern California College of Optometry, and is capable of detecting all visual problems screened by the Modified Clinical Technique (MCT) which evolved through the joint cooperation of optometry and ophthalmology. The MCT is accepted by both groups and has been considered the best visual screening procedure. However, the MCT requires eye care practitioners to administer the tests, whereas the MTT can be administered by school nurses or school personnel who hold a teaching credential and have completed a course in visual screening of at least six clock hours.

The following table delineates the effectiveness of the Snellen Chart, Modified Telebinocular Technique (MTT) and the Modified Clinical Technique (MCT). It clearly shows the MTT to be as effective as the highly regarded MCT which, as stated, is impractical because a team of vision specialists is needed to administer it.

#### EFFECTIVENESS OF SCREENING PROCEDURES

Snellen Chart	Modified Telebinocular Technique (MTT)	Modified Clinical Technique (MCT)
<u>Sensory</u>	<u>Sensory</u>	<u>Sensory</u>
Myopia	Myopia	Myopia
Hyperopia	Hyperopia	Hyperopia
	low	low

	rh-241	
	moderate	moderate
Astigmatism	Astigmatism	Astigmatism
	low	low
	moderate	moderate
high	high	high
	Stereopsis	Optional
	Color Perception	Optional
	Fusion	Fusion
	far	far
	near	near
	Suppression	Suppression
	Anisometropia	Anisometropia
Amblyopia	Amblyopia	Amblyopia
<u>Motor</u>	<u>Motor</u>	<u>Motor</u>
	Lateral and	Lateral and
	Vertical	Vertical
	phorias (Muscle im-	phorias (Muscle
	balance)	imbalance)
	far	far
	near	near
	tropias (deviation	tropias (deviation
	of the eyes)	of the eyes)
	far	far
	near	near

In summary, it is evident that the widely used Snellen Chart is markedly inferior to the MTT. The MTT is as effective as the highly regarded, but far less practical, MCT. School districts that are looking for more thorough and valid vision screening will find that the MTT meets their needs.

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# BRIDGING THE GAP: WAYS TO HELP CHILDREN UNDERSTAND THE ELDERLY

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How can teachers assist their students in breaking the "generation gap" with the elderly? How can teachers change the term "generation gap" to "communication gap"? What positive ways can teachers expose their students to view the value of the elderly without promoting stereotyping and discrimination? How can teachers aid their students in sharing the lifelong experience of the elderly, regardless of their ages? What precise methods can teachers use with their students to portray the elderly as "ageless achievers?" (Scott, 1983) who have too much to give to give up (Rock, 1983)? The answers to these questions lie in providing students with specific classroom learning activities which can foster positive understandings of the elderly and the aging process.

The following is a miscellaneous collection of ideas for learning activities which can enhance, create, encourage, and develop a "communication bridge" between the elderly and today's youth. These learning activities are ungraded and can be easily adapted for classroom use.

1. Encourage children to design a family tree and re-search their roots.
2. Encourage children to discover what their grandparents' names mean.

(Use First Names from Abby to Zach 1983, written by Felder and Burt or baby name books as references.)

3. Develop Grandparent's Favorites Questionnaires. Have the children take the questionnaires to their grandparents and let them answer the questions orally.

My favorite holiday is \_\_\_\_\_.

My favorite color is \_\_\_\_\_.

After the questionnaires are returned, graph the results, and create a bulletin board display titled "Our Grandparents' Favorites." This is an excellent way to integrate math concepts, reading, and an under-

standing of the elderly.

4. Dramatize and videotape a particular story, play, or poem dealing with the topic of aging. Present the videotape to a parent advisory council or parent teacher conference meeting, or inservice training sessions for teachers and administrators, demonstrating how positive attitudes of love and respect for grandparents can create an understanding of the aging process, the elderly, and grandparenting.

5. Reinforce language development through retelling and predicting stories, such as We Can't Sleep (1982) written by James Stevenson.

6. Create questions which generate children's responses on aging. Use open ended questions and sentences, or metaphorical language exercises. Sample exercises are given:

What is a grandmother?

Aging is \_\_\_\_\_.

My grandfather is like \_\_\_\_\_.

7. Encourage creative writing experiences. Permit the children to compose poems, stories, songs, letters, birthday, holiday, greeting, or postcards, slogans, (Grandparents are Ageless) and bumper stickers (I LUV MY GRANDPARENTS) for their grandparents.

8. Sponsor a Foster Grandparent Program in your classroom or school providing volunteer opportunities for grandparents to establish a positive relationship with a child or a group of children.

9. Establish a weekly I'll Read to You, You Read to Me, reading program. Each week a child invites his or her grandparent(s) to the school to listen to children read a story to them. Then the grandparents can read a story to the children. A newsletter can be sent out early in the school year explaining the purpose of the program. If a grandparent(s) wish(es) to participate, (he/she/they) can respond on the newsletter indicating convenient days and times that they could come to the school. If grandparents are unable to participate, permit the child to invite another adult.

10. Celebrate a Grandparent's Happy Birthday Party in your classroom. Each child invites his or her grandparent to school wishing grandparents all over the world a Happy Birthday. If a child's grandparent cannot attend, permit the child to invite another adult. Children can entertain their grandparents with

songs, poems, choral readings, skits, or puppetry.

11. Have a Career Awareness Day or My Favorite Collectibles Day in your classroom. Invite the grandparents to the school and encourage them to talk to the children about their careers, hobbies, or collections that they are presently involved in or did in the past.

12. Sponsor a Book Fair in your school library. Let children create television and radio service announcements, book reviews, bulletin boards, displays, or posters for promoting books on grandparenting, the elderly, or the aging process.

13. Permit children to create wordless picture books using cartoons. The Flying Grandmother (1981) written by Naomi Kojima is a wordless textbook presented with numbered cartoons. It tells the flying adventures of a little girl and her grandmother who are outfitted with wings.

14. Integrate science and the aging process. Ask questions which stimulate classroom discussion; for example, "What causes senility?" or invite a local physician to speak with the children about aging.

15. Integrate social studies and the aging process; for example, "Who was Grandma Moses?"

16. Integrate reading and language arts with Susan Hogue's book titled I Unpacked My Grandmother's Trunk (1983). It is a popular word game book which teaches the letters of the alphabet, memory, and sequencing.

17. Cut out, paste, and laminate photos from magazines or newspapers which depict the elderly in positive and productive ways. Permit children to react to the illustrations. An excellent resource is Dorka Raynor's book titled Grandparents Around the World (1977) which presents forty-six full page black and white photographs of grandparents and children taken in twenty-five countries with a brief identifying text accompanying each photograph.

18. Let children create a school newspaper or a magazine. Feature columns or articles on the elderly, the aging process, or biographies on the children's grandparents.

19. Let children send telegrams to their grandparents. Design original telegram forms or obtain them from a local telegraph office. Each child writes a message to

his/her grandparents. The words are cut out of old newspapers or magazines and glued to the telegram blank. Since a telegram contains no punctuation, tell children to use the word STOP to indicate a period.

20. Create an interest in etymology. Encourage children to discover the origin and the history of such words as grandmother, grandfather, grandparents.

21. Increase vocabulary through the direct teaching of synonyms and antonyms; for example, the synonym for grandfather are granddad, grandpop, grandpa, grandpapa, gramps, and the archaic form, grandsire.

22. Let children write about their grandparents' favorite recipe or helpful hints. Compose a cookbook titled Our Grandparents' Favorite Recipes or a helpful hints book titled Our Grandparents' Helpful Hints. Give a copy of the book to each child to give to his/her grandparents.

23. Let children write or contact local officials and television or radio stations to announce a Grandparents Day Celebration to be held in a local school or community building.

24. Assist children in understanding and coping with death. Use Leo Buscaglia's book titled The Fall of Freddie the Leaf: A Story of Life for All Ages (1982) which is an allegory illustrating the balance between life and death.

25. Read The Giving Tree (1964) written by Shel Silverstein. Let children pretend that they are the giving tree. What would they give their grandparents? Let them design a giving tree and write their thoughts about it. Bring in an artificial Christmas tree and display the children's drawings and thoughts on the tree.

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# TOWARD A THEORY-PRACTICE INTEGRATION: THE UNIVERSITY GOES TO SCHOOL

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One of the problems facing every professional is that of keeping pace with developments in the field after university graduation. This is certainly true in education where time pressures and financial restraints increasingly prohibit study leaves for teachers who feel the need for re-alignment with current pedagogical thought.

Recognizing the need for increased inservice education, the Alberta government, 1979, called for proposal for innovative delivery systems for teacher inservice. The delivery system reported here resulted from one of the proposals that were selected for funding.

A number of criticisms which have frequently been targeted regarding teacher inservice guided the formulation of general principles on which the delivery system was designed.

First, the lack of relevance of inservice programs to specific teacher needs is a perennial problem. In an attempt to obviate this problem a thorough needs assessment was conducted by the University of Calgary Teacher Inservice Office. In this way higher need target areas for inservice were determined. Perhaps, what is as important here as the needs that were identified is the fact that teachers had a voice in programs that would be implemented--a degree of investment--at least part ownership in the decision-making process.

Second, and closely linked to the concern over relevance, inservice programs have typically been criticized for their lack of practicability. To answer that criticism the delivery was designed to demonstrate instruction at a practical level. At the same time it was deemed desirable to communicate through such demonstrations the relevance of sound theory behind practice.

A third problem seen as a potential obstacle to effective inservice was that of short, one- or two-

session exposures. Our delivery system made provision for a minimum of 24 hours of contact time with the inservice leader, the length and spacing of sessions to be negotiated with the target audience of teachers. In this way opportunities were afforded for teachers to experiment with and modify within their classrooms, specific instructional strategies highlighted in inservice sessions. Further, it allowed them the luxury of questioning, even challenging, information derived from previous sessions.

Finally, teachers frequently react unfavorably to investment of time for inservice for which tangible returns are minimal or non-existent (Conran and Chase, 1982). Provision was made in this program for participants to receive university credit to be applied either to an undergraduate or graduate degree. Arrangements were made with the registrar to allow for the design of courses upon demand, to be given in flexible time frames, without the usual, long-range processing and clearing of courses up the bureaucratic ladder. Further, it was deemed desirable to offer courses at school sites central to the largest number of applicants for a given course offering.

A description of the design of the program, its implementation, and evaluation follows.

#### Content of the Program

One of the perceived needs clearly identified in the initial assessment was that of guidance in instruction which subscribes to an integrated approach to teaching the language arts. This was not unexpected since the Alberta Education Department had just recently mandated a language arts curriculum with a strong emphasis on integration. (i.e., curriculum based on the interrelationships among listening, speaking, reading, and writing) Many teachers felt that they did not understand the concept of integration sufficiently to design a program based on the philosophy. For these reasons the encompassing objective for the total inservice program was

To enable practicing teachers to understand how knowledge of the interrelationships and interdependencies among the language arts (listening, speaking, reading and writing) can be applied to the design of language arts instruction.

This overall, general objective was broken down

into eight more specific objectives each dealing with an important aspect of application of the interrelationships of the language arts (the basis for an integrated instructional program). Each of the eight objectives formed the basis for an instructional module. For example, the objective for Module I was:

To enable practicing teachers to plan instruction designed to help children build bridges from oral language to emergent reading and writing.

#### Components of the Delivery System

The delivery system consisted of a number of interlocking components designed to enable participants to achieve the content objectives designated for each of the eight modules.

The key component was a video tape corresponding with each objective. These actual video teaching vignettes were drawn from natural classroom and individual instructional settings. The instruction was unscripted and unstaged in an attempt to achieve maximum credibility. It has since been determined that the naturalness of the settings has achieved this goal. Many participants have commented on the fact that the instruction they viewed seemed "believable".

Background narration to the video was dubbed over the instructional vignettes in order to highlight dominant instruction/learning aspects, but also to comment on theoretical underpinnings to particular instructional components.

Another component of the delivery system was that of Independent Study Guides. These guides correspond in content with the video modules. They were written to achieve the following purposes: 1) to provide participants with introductory cognitive organizers for each of the video viewings. Such organizers included a statement of the objective, a very brief theoretical sketch to guide the viewing of practical instruction, and a reminder of how the specific objective related to the global objective of the course; 2) to provide students with an appended script of the complete video narration for follow-up reference; 3) to provide students with information to supplement both the theoretical aspects of the video presentations and instructional strategies, and 4) to provide students with supplementary information relevant to classroom observation



of children's language arts development.

It was felt that course participants should become aware of at least some of the research literature in the language arts. Since most of the course offerings have been off-campus, it was deemed necessary to make reading materials available on site. In order to expedite selection of articles, extensive annotated bibliographies were compiled and copies distributed to course participants. The major sources of the articles were: Language Arts, Reading Teacher, Journal of Reading, and Reading Horizons. The following example illustrates the extent of information available for each source:

Cunningham, Patricia, "Beginning Reading Without Readiness: Structured Language Experience," Reading Horizons, Vol. 19, No. 3, 1979, pp. 222-227.

This article describes a "structured" language experience approach which does not assume basic language fluency as it builds readiness and reading skills. The suggested group size is from three to five students, some of whom have a low level of oral language facility and some whose language skills are more developed. The article outlines the development of a language experience story spanning a five day period. This approach will help children increase their language fluency, enhance their knowledge of sentence and word, promote movement of eyes automatically from top to bottom and left to right, develop a store of basic sight words, and promote confidence in their ability to learn to read.

Copies of articles were then made available on a check-out basis. The benefits of this supplementary reading component can best be summarized by the following representative testimonials, "I wasn't aware the Language Arts published this kind of information; how could I get my own journal?" Evidence of benefits beyond course participants is seen in statements like "I shared this article with my colleagues; this is exactly the kind of input we are looking for."

The final component of the course involved a "course requirements agreement" between individual participants and the inservice leader. Since the course was designed to allow participants to test new theory in their own classroom settings, it was important to accommodate for high individualistic goals within the general course framework. For this reason

students were asked to submit a course requirement agreement proposal early in the term. They were allowed to select from among a wide range of suggested "classroom application projects" or to propose a project of their own choosing. These proposals were turned in to the inservice leader who suggested modifications, deletions, or approval. It is interesting that the most common suggestion was that of deletion, as the enthusiasm for satisfying course requirements "on the job" led many participants to propose projects in a scope much beyond expectations for minimum course requirements.

#### Evaluation of the Delivery System

To date more than 200 teachers have taken the inservice course at eight different locations (urban and rural).

Course evaluations have been uniformly highly positive. Many participants indicate that they are adapting their own instructional strategies. Many have commented that they "feel good" about being able to apply current theory in their classroom. Some have indicated that they have found a rationale for some of the strategies that they have used prior to taking the course, and are now pursuing these strategies with greater confidence and enthusiasm. One participant echoed the sentiments of many: "the course, among other things, was useful because it has lessened my guilt about playing with oral language and going out on a limb."

Many participants have commented on the excellent theory-practice balance. Viewing video vignettes, listening to an underlying rationale, and then evaluating their own teaching in this light provided incentive for modifying approaches to instruction. They have been highly positive about the nature of the course requirements. Many felt that the personal choice of project added to their sense of "ownership", and also spurred them to think about their new learning on a continuous basis.

Participants have been unanimous in their positive reaction to off-campus, flexibly scheduled meeting times. They were happy about minimum travel time and responded favorably to meeting right within the school.

There is no question about the thrust of a delivery system like the one documented here to bring theory to the classroom teacher if the methodology, time, and place are right. It is proposed that such a delivery system could be used for virtually any content within the language arts domain--developmental or corrective.

It is proposed, further, that the delivery system has implications for the development of inservice programs for consultants, clinicians and administrators. A modification that might be applicable could include presentations of detailed case study modules. This would allow for an intensive study of a variety of assessment procedures as well as close examination of specific assessment-intervention links. It is suggested that the use of such a system for case study analysis has excellent potential for multidisciplinary discussion relevant not only to assessment-intervention concerns but also to the study of etiological variables.

In short, it is conceivable that the delivery system, with minor modifications could be applied to virtually any content area and streamlined to meet the needs of most target audiences. The necessary ingredients are - demonstration of, rather than talk about theory, and opportunities to apply, not in a term paper, but in the classroom.

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# LEARNING FROM EXPERIENCE TO IMPROVE OUTCOMES IN READING: A CASE STUDY

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How can teachers learn more effectively from their own practice? Experience may indeed be a valuable teacher but it has a serious limitation: classroom events happen too quickly for the practitioner reliably to aggregate the results of instruction in order to profit from them. Isolation and overreliance on personal experience further restrict the range of necessary information available to a teacher that can be used to evaluate instructional decisions and actions in light of student achievement outcomes.

In the teaching of reading, the absence of specific information linking student outcomes back to reliable diagnosis and instruction has presented a major obstacle to learning systematically from one's own experience. Improving student outcomes in reading requires that the teacher receive information that reliably classifies student performance into the appropriate diagnostic categories. Assurance of diagnostic reliability is central to evaluating one's instructional practices. If the diagnostic categorizations are unreliable, it is not possible to determine whether instruction was inadequate for the student's problem or whether student performance was incorrectly diagnosed and good instruction was wasted on the wrong problem.

Unfortunately, diagnostic unreliability has been shown to be a pervasive problem in the field of reading. Only recently has it become possible to remedy the situation and to provide teachers with reliable diagnostic information. A series of studies on the diagnostic reliability of educational practitioners (Vinsonhaler, Weinshank, Wagner & Polin 1982; Weinshank 1982; Vinsonhaler, Weinshank, Wagner & Polin 1983; Weinshank & Vinsonhaler 1983) showed that reading and learning disability specialists and classroom teachers did not agree with themselves or with one another in their diagnostic judgements about simulated cases of children with reading problems.

A second series of studies (Vinsonhaler, Weinshank, Polin & Wagner 1983) showed that the reliability of diagnostic decision-making could be improved dramatically through the use of a specific type of training program. Two important products of the training studies series were 1) a reading diagnostic test battery based primarily on performance in instant word recognition, decoded word recognition, oral reading, silent reading comprehension and listening comprehension, and 2) a computer program for generating a reliable diagnosis given the data from student performance on the battery. Thus, it became possible to provide teachers with reliable diagnostic information about their students' reading performance.

This paper presents a case study of a junior high school remedial reading teacher who was provided with reliable diagnostic information about her students' reading performance and was thus able, for the first time, to learn systematically from her own experience and make changes for the better in her instruction.

#### A Case Study of Diagnostic Validity

The ability to train practitioners to be more reliable and/or have reliable diagnoses provided them became the basis for a series of outcome studies in the primary author's seventh grade pull-out remedial reading program. (The author is a collaborating teacher with the Institute for Research on Teaching, conducting research half-time and teaching half-time in the public schools.) The studies were designed to test the methods needed to move from diagnostic reliability to issues of diagnostic validity: verifying linkages that exist between diagnosis, instruction and student achievement. That is, given reliable diagnostic information, what instructional plans do teachers carry out and with what effect on students?

During the first year of the study (Wagner 1982), the diagnostic battery was administered to each student in the program as a pre and posttest. Using diagnostic decision aids developed in the training series, the teacher wrote a diagnosis for each student. The same data were used by the computer program to generate a computer-aided diagnosis. Agreement between teacher and computer was better than 90%. Thus, with the help of decision aids and the computer program, this teacher had become reliable in making diagnostic judgments about her students' reading problems. The remedial instruction which the teacher implemented with her students was docu-

mented by her daily notes and supported by interview and observational data collected by the project staff. At year's end, gain scores across the diagnostic categories were computed for all students.

The information on student gains confirmed some of the teacher's subjective evaluations and disconfirmed others. Much lower than anticipated gains in oral reading led the teacher to alter instructional procedures for a new cohort of students the following year. With the help of an instructional aide, the teacher instituted two major changes in her practice. First, she decided to abandon drill on common word families; the expectation that the patterns would be generalized to unfamiliar words encountered in text was not supported by the performance scores. Instead, vocabulary words would be drawn exclusively from the materials which the students would be reading. These words had to be mastered to a speed and accuracy criterion before text reading was begun. Syllabication strategies and sound-symbol association drill would be embedded within the vocabulary words. Second, instead of group oral reading for a portion of each session, daily oral reading on an individual basis was established.

The teacher's stated instructional goals emphasized improvement in word recognition and analysis skills within the context of extended, supervised oral reading. Five groups of four to six students came to the reading room from their respective classrooms for a 25-minute session four days a week between October and May, for a total of 40 instructional hours. The teacher had two major goals: (1) automate analysis and recognition skills in a framework of contextual reading and (2) give the students confidence in their ability to control the flow of print visually and orally. The teacher specifically stated that direct instruction in comprehension ran second to these two instructional goals. In her judgment, instructional time constraints coupled with serious deficits in word analysis and fluency dictated a primary emphasis on bringing those skills up to grade placement. Comprehension probes were used informally within the oral reading context.

The students moved through a fixed sequence of materials, entering at a level determined by the results of their performance on the word recognition and oral reading subtests of the battery. While sometimes allowed to skip certain steps, students generally moved through the sequence at their own pace. The program functioned

more as a clinical than as a classroom setting. Students read orally twice during each session. Vocabulary lists preceded various subsets of text, and those words had to be mastered to a speed and accuracy criterion before oral reading began.

The teacher described her program as a staged one. In Stage 1 students used a linguistically based reading program. This type of program typically starts by presenting single-syllable words made up of highly regular sound-symbol correspondences and then proceeds slowly to more irregular ones. Students were placed in reading texts appropriate to their levels of performance. No worksheets or isolated phonics drills were used. In the second stage, a small number of syllabication heuristics were presented so that the previously mastered sound/symbol associations could be transferred to two- and three-syllable words. Content-based texts were used during this phase. The goal of the third stage of instruction was to move students toward fluency and automaticity with texts of increasing difficulty. A variety of basal texts at grade levels 6 and 7 were used for contextual practice.

The teacher recorded oral reading performance all through the year. Every time a student read, the date, page(s) read, elapsed time and words miscalled were entered on a sheet devoted to the particular text the student was working with at that time. Text read at a very slow rate and/or with excessive miscalls was repeated and documented so that students could both hear and see changes in their own performance. After completing an oral reading session, the student continued reading silently until called back 5-10 minutes later to read orally again.

The procedures for this second year's study were to (1) collect reliable diagnostic data on each student using the diagnostic battery before the year's instruction began; (2) return the performance information to the teacher; (3) repeat diagnostic testing at the end of the year and return the performance information to the teacher; (4) determine student outcomes and return that information to the teacher, and (5) examine the links, between instruction and outcomes.

#### Collecting Reliable Diagnostic Data

The diagnostic battery was administered individually by trained testers at the beginning and end of the year

to the 23 students in the reading program. The students admitted to the program were reading two or more years below grade placement. The battery included measures of known reliability and provided data on seven variables of interest: grade level for word recognition and percent of words correctly identified by decoding (Slosson Oral Reading Test); grade level for oral reading of paragraphs based on number of miscalls and mean words per minute (Gray Oral Reading Paragraphs); grade level for silent reading comprehension based on percent of memories recalled and mean words per minute (Durrell Silent Reading Comprehension); and grade level for listening comprehension based on percent of memories recalled (Durrell Listening Comprehension).

### Returning Pretest Information to the Teacher

The teacher received pretest diagnostic information in two different forms: (1) numerically, as individual and mean group scores for each of the seven diagnostic categories and (2) graphically, as performance charts. The four charts allowed the teacher to see group configurations before and after instruction and to track changes for individual students. Figure 1 shows a pretest performance chart for oral reading.

RATE: WORDS PER MINUTE

0-60	61-70	71-80	81-90	91-100	101-110	111-120	121-130	
				30				6th
		03 21 27						5th
		12 32	24 05	09 33 17		28	34	4th
23	15 11	02 04 14	29	26	16			3rd
		20						2nd

GRADE EQUIVALENTS



In this class, 87% of the students entered reading orally at three or more years below grade placement. By the end of the year, that figure had dropped to 57%. A trend toward increased reading rate can also be noted. On the individual level, student 14, for example, entered the program reading at a third grade level and exited reading at an eighth grade level.

### Posttest and Outcome Information

The diagnostic battery was again administered to all students after the year's instruction was over. Values for each student (posttest minus pretest) for each of the diagnostic categories were calculated. Posttest and outcome information were returned to the teacher in numeric and graphic forms. The posttest and outcome charts for oral reading are shown in Figures 2 and 3.

RATE: WORDS PER MINUTE								
	0- -60	61- -70	71- -80	81- -90	91- -100	101- -110	111- -120	121- -130
10th gr.							30	
8th gr.			14					
6th gr.			16 15	21	05 03 24	27		
5th gr.		02	32 29	26	34 28 09 33 17			
4th gr.		04	12	20	23			
3rd gr.			11					

GRADE EQUIVALENTS

Two digit numbers plotted = student I. D.

Fig. 3 - CHANGE IN RATE: WPM

	-30	-20	-10	0	+10	+20	+30
+5							
+4					30		
+3		16			15		
+2			02 26	29	24 20 05		
+1	34 28			04 09 32 17	33	03 21	27 23
0				12	11		
-1							

Losses and gains given in years.

Outcome results show the differential effects of the teacher's instruction, at least as measured by the diagnostic tests that were used. The students showed strong gains in oral reading accuracy with some signs of increased rate. Their word recognition skills improved, and their use of decoding as a strategy for word attack was increased. Performance on silent reading comprehension paragraphs was not as encouraging. A trend toward increased silent reading rate suggests that the students may well have been reading both more fluently and more accurately given their oral reading and word recognition performances, but these subskills did not appear to impact comprehension of the test paragraphs. Listening comprehension showed the least change. In general, the students seemed to find the subject matter

of the paragraphs as obscure at the end of the year as the beginning.

To summarize, the outcome results were as follows:

1. Word Recognition. The mean gain was 1.3 years in grade level (range = .3-2.3); mean percent of words decoded rose from 6.5% on the pretest to 16% on the posttest.
2. Oral Reading. The mean gain, as measured by number of miscalls, was two grade levels; mean words per minute remained essentially unchanged (84 w.p.m. on the pretest and 87 w.p.m. on the posttest.)
3. Silent Reading Comprehension. The mean gain was 0.5 grade level (range = 0-3.0); mean words per minute increased 7.4% (100 w.p.m. on the pretest; 108 on the posttest).
4. Listening Comprehension. There was essentially no change in mean performance (grade level 5.0 on the pretest; grade level 5.1 on the posttest).

#### Linking Instructional Practices to Outcomes

The overall outcome results confirmed the relative efficacy of the teacher's instruction in word recognition and oral reading and the relative lack of impact of her instruction on silent reading comprehension and listening comprehension. A more fine-grained examination of linkages connecting diagnosis, instruction, and outcomes is made possible by observing the effects of the instructional program on students in any given pretest cell of a performance chart. If each cell does, in fact, represent a diagnostic category that correctly separates like from unlike students, then it should be possible to pinpoint differential effects of instruction across categories.

Outcome results for both word recognition and oral reading for students with identical pretest scores were analyzed. Results show that the teacher was most effective with the most disabled of the students in both word recognition and oral reading. In word recognition, the strongest gains were made by the students who entered three or more years below grade placement. In oral reading, the strongest gains were made by students who entered four years below grade placement. Of the eleven students in this category, nine made gains ranging from one to four years. The effects of instruction on oral reading rate are ambiguous. Strong gains in grade-level placement were as often associated with increases in

rate as with decreases.

Analyzing word recognition performance on the dimension of percent decoding showed that all students in the 5% decoding category increased their level of decoding irrespective of grade-level placement. However, of the students in the 15% category, only those who entered three or more years below grade placement increased the number of words arrived at via decoding. This appears to further confirm the efficacy of the program for the weakest readers.

An analysis of the teacher's instructional documentation for oral reading provided information, by student, on rate, number of words read orally, number of times (trials) a selection was reread, a list of all words that were miscalled and attendance data. Findings for this class include the following:

1. Mean rate for oral reading during instruction was  $63 \pm 7$  w.p.m. This was slower than the rate for oral reading paragraphs on the pretest ( $84 \pm 17$ ) and the posttest ( $87 \pm 12$ ).
2. Mean number of words read orally was approximately 26,000. Students who made the strongest gains were below the mean; they read about 20,000.
3. Mean number of trials was 1.5. Repeated trials (more than 2) were effective in reducing miscalls but ineffective or counterproductive in increasing rate. The teacher has learned that having students read a selection more than twice is an exercise in diminishing returns; students would be better off reading another selection of comparable difficulty.
4. Across all students, 2,478 words were miscalled during oral reading. Of the list words mastered prior to oral reading, only 15% were subsequently missed, suggesting that list mastery probably contributed to fluency.
5. Mean attendance was 82%; most of the students came to most of the sessions.

For the first time in her teaching career, this teacher received specific information which enabled her to link day to day instructional activities with student achievement in reading. On the basis of this information she made several decisions about the next year's program: (1) continue using text-based vocabulary for decoding and syllabication practice; (2) limit repeated reading of a passage to two trials only; (3) eliminate use of the linguistically-based materials except for the very

weakest students; stronger students would enter the sequence at Stage 2, and (4) maintain comprehension instruction at the same informal level.

### Establishing Diagnostic Validity Within and Across Classrooms

The results of the study indicate that it is possible to introduce into a classroom setting a system for establishing diagnostic validity, that is, establishing the links that connect diagnosis, instruction, and student achievement. The procedures are completely non-intrusive and are sensitive to the teacher's regular instructional practices. Receiving information about the results of instruction might or might not persuade a teacher to alter practice but it does provide a rational basis for decision making. This teacher found that overall, her instructional program served her goals of improving word recognition and oral reading skills. She learned that her program is more effective for the lowest achieving entering seventh graders than it is for those somewhat less disabled. She has decided to alter her instructional strategy for the stronger entering students but has not decided how (or whether) to expand her goals to include more direct instruction in comprehension.

The teacher can continue to learn from her own teaching practice by repeating the documentation of the diagnostic-treatment-outcome cycle year after year. But the process is, in principle, very slow and there is no comparative information available to her from other teachers who deal with similar students. How do students with similar entering characteristics fare in classroom settings that are similar or different from hers? How do they fare with similar or different materials and strategies?

Diagnostic validity for students who range across the whole spectrum of reading performance can be established over time only by practitioners willing to learn from their own practice and from that of their colleagues. Learning from experience in order to improve practice in reading depends on teachers having access to reliable information about the outcomes of their own and their colleagues' instructional practices. In a study currently underway, the authors are extending the procedures described for establishing diagnostic validity to 10 fifth grade classrooms. A major goal of the research is to document a full range of diagnostic classifications, associated instruction and student achievement in reading.

Such documentation would provide a benchmark against which teachers and researchers could measure the consequences of instruction both within and across classrooms. Practitioners would be in a position to learn from and share their own and their colleagues' experience while simultaneously contributing to the growth of a descriptive, and ultimately prescriptive, data base that connects diagnosis with instruction and with the outcomes of instruction.

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# AN INSERVICE PLAN FOR TEACHING READING IN KINDERGARTEN: A DESCRIPTION

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The appearance of basal reading systems which include materials for the kindergarten level has caused many school systems to examine the appropriateness of reading instruction at this level. The adoption of these materials, along with the fact that many teachers of kindergarten lack basic preparation for teaching formal reading lessons (Bailey et al, 1982), has created the need for specific staff development plans for this grade level. The present article reviews one district's process for helping kindergarten teachers integrate formal reading instruction into their classroom curriculums. These inservice sessions, which have been developed and implemented in the Beaver Dam, Wisconsin schools, were an outgrowth of a system wide adoption of a new reading series which included materials for the kindergarten level.

In planning for the implementation of the new reading series it was found that a specific kindergarten inservice component, in addition to district wide orientations, was essential to the success of the new adoption. In formulating this inservice effort a model was devised which was founded in current research (Shannon, 1979; Byrne, 1983; Lawrence, 1974; Smith and Dauer, 1983) which exemplifies effective staff development. Specifically, the inservice sessions would be teacher oriented and would focus on the teachers' immediate need to use the new reading materials effectively. The sessions would be planned in a specific sequence--each session related to the others. Further, a variety of human resources would be utilized.

The Beaver Dam elementary staff development plan provides for monthly grade level meetings. These meetings would provide the setting for the sessions.

Initial planning took place in September and October, coordinated by the reading specialist and grade level leader. Others actively involved initially were the

school psychologist, the consultant from the textbook company, and the elementary principals who gave their support to the plan and leadership in the buildings--an essential to any school based staff development plan (Lieberman and Miller, 1981).

Following planning sessions at the September and October grade level meetings, three separate inservice sessions were planned. These sessions, each limited to one hour, were implemented at the December, January, and March kindergarten grade level meetings.

The goals of these inservices are summarized as follows:

- 1) To reexamine the reading philosophy of the district as it related to the teaching of reading at this level.
- 2) To integrate the instruction and assessment of reading using the new series.
3. To help the participating kindergarten teachers develop competencies using the basal system in the development of their reading lessons.

The three inservice programs are summarized below:

Objective:

To review the district's reading philosophy.

Activities

Review and discussion of district reading philosophy as it relates to each teacher's understanding and views of reading at this level.

Major Participants

Reading specialist

Kindergarten teachers

Comment--Although the teachers agreed with the philosophy of the district that children should be taught at the level of their ability, different teachers in the grade level did in fact view reading instruction at the kindergarten level in different ways ranging from "enrichment for the talented" to "essential for all children."

Session two

Objective - To review instructional techniques used in the basal series at the kindergarten level.

Activities

Formal presentation of basal reading system components by textbook consultant with emphasis on the instructional techniques used in the series.

Major Participants

Text book consultant

Reading specialist, and kindergarten teachers



Comment - This session was most useful in regard to answering concerns on how the series presented skills and how its philosophy of early reading related to that of the district. Also, at this session, the reading specialist discussed techniques which could be used in addition to the series; e.g., language experience approach.

#### Session three

Objective--To review the placement procedures, pacing, and questions dealing with program management.

Activities--Review of management component in the basal system by the reading specialist with emphasis on placement tests and periodic criterion testing.

Participants--text book consultant

Reading specialist

Kindergarten teachers

Comment--In this session all agreed that not all children should begin the series at the same time or progress at the same pace once they did begin. Also, the testing component in the series was reviewed so that all teachers could become familiar with the tests and would use them in the same way.

Following each session, follow-up visits were made by the reading specialist to review certain points covered in the meeting, to assist in individual planning, or to answer any questions a teacher might have relating to the new reading series. The textbook consultant was also available for follow-up visits.

Overall, teachers felt that these sessions provided a common framework for the teaching of reading at their grade levels. Generally, communication among the teachers improved as a result of the meetings. Also, when two new teachers came into the grade level in 1984, the sessions provided a framework for their initial staff development at the kindergarten level.

#### Discussion

This article presents an overview of one district's plan for meeting specific teachers' needs to use new instructional materials at the kindergarten level. This plan focused on the following essential components for successful inservice programs.

1. There is a systematic, sequential plan for the staff development.

In this model, planning sessions were held to develop specific goals and objectives for each of the three

sessions. Each session was developed based on the session before.

2. There is staff involvement in the development of the plan.

In the preliminary meetings, the kindergarten teachers were able to express their needs in regard to the reading adoption. Other staff involved in the planning of these sessions were the school psychologist, the reading specialist, and several elementary principals.

3. All possible human resources are used in the implementation of the plan.

Although the reading specialist assumed the coordination role in this model, other resources were used. These included the textbook consultant, grade level leader, and school psychologist.

4. The inservices are teacher oriented and based on the specific needs of the participants.

All kindergarten teachers would be using the new series in their classrooms. This model provided them with the specific answers to their questions.

In summary, as more schools adopt reading series which include materials for the kindergarten level, the training of staff in the proper use of the materials will be essential to the success of these adoptions.

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# READING INSTRUCTION: FROM CLASSROOM TEACHER TO "COMPANY" TEACHER

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In a recent essay in the Journal of Reading, Guthrie (1982) presents some startling facts. For example, business and industry in this country now spend almost as much on education and training as public colleges and universities--an annual amount of about \$30 billion. American Telephone and Telegraph, prior to the restructuring of the company (and probably still), spent about \$1.1 billion annually to develop programs and to educate employees, nearly 30,000 of whom were attending classes on a daily basis. The kinds of programs offered range from basic reading and writing courses to seminars designed to stimulate thinking. Guthrie points out that "The preparation of teachers in the future will be affected by the needs of major employers. ...the company teacher will be everywhere tomorrow." (p. 495) Those of us, committed to teacher education must be prepared to develop the kinds of programs our students will need in order to be successful in these new roles. The emphasis in this paper, then, will be on preparing that person Guthrie calls "the company teacher."

In an earlier article (1983) these writers maintained that reading can make significant contributions to the preparation of company teachers, and that an awareness of what is needed for effective preparation of company teachers may have a positive impact on the training programs offered to traditional reading teachers. Further, we believe reading teachers--trained to work in schools--have demonstrated the potential to be leaders in company training as well. The skills they possess--good communication ability, evaluating success of learners, organizing learning experiences, and managing by objectives, just to name a few--are valuable in business as well as in schools

## The Classroom Reading Teacher as Company Teacher

Where, then, do these reading teachers fit in the scheme of company teachers? In other words, who are the company teachers? Generally, they come from four sources. First are those who work for commercial management training companies, whose sole endeavor is to develop and implement

commercial training packages for specific industries. A second type includes teachers or consultants, often from colleges or universities, who are contracted to teach a particular course desired by a business. The third group would be those employees of a business who had demonstrated enough ability in a skill area (i.e., welding or riveting) that they were selected to train peers or new employees. The final group would be those people hired as full-time employees of a company specifically to work as company teachers. It is in this group that teachers with traditional, school-based reading training are most likely to be found.

Why are reading teachers likely to be successful in the role of company teacher? Two major reasons should be examined. First, many employers feel that a primary problem in their businesses is the relatively large number of employees who are deficient in reading and related communication skills. Second, within these businesses is the need to train lower level technicians to receive and process essential information accurately while helping higher level technicians prepare and present that information effectively to those lower level technicians. These two problem areas are closely related to the tasks performed by reading teachers in schools, where pupils are being taught to read while teachers are being helped to prepare and/or select appropriate instructional materials.

The following chart shows more clearly some of the major comparisons between reading teacher and company teacher:

	<u>Reading Teacher</u>	<u>Company Teacher</u>
A. Setting	School	Business, industry, government agency
B. As resource person serves	Teachers	Management (Higher level technicians)
C. Indirect instruction serves:	Pupils	Workers (Lower level technicians)

In terms of instructional practice, the following analysis seems appropriate. In the role of company teacher, there is a need to select appropriate mate-

rials for teaching lower level technicians (LLT's) which are accurate, comprehensive, and understandable. The primary skills a reading teacher has that would relate to this need are the assessment of materials (readability) and the assessment of the learner's reading ability.

The company teacher must help the LLT's gain essential information from materials that may be too difficult or may require more background and/or time than LLT's have available. The reading teacher is prepared to provide assistance in this area by teaching the material in something like a directed reading activity format, by developing study guides, process guides and structured overviews, or by adapting (rewriting) materials.

A third responsibility of a company teacher is to assess whether or not LLD's are keeping up with information essential to the efficient operation of their responsibilities. The reading teacher would be able to do this monitoring by establishing essential learning objectives, then evaluating achievement of those objectives through the use of such devices as teacher-made tests, cloze procedures, and various observation and questioning techniques.

One other major activity for the company teacher would be to help keep the level of understanding of the LLT's going up so that those LLT's can cope with increasingly complex systems and equipment, some of them can accept higher levels of responsibility, and some can generate new and more efficient ways of operating the system (i.e., evolve into higher level technicians). In order to do this, the reading teacher would do such things as group for specific purposes of instruction, differentiate assignments, use simulations, role switching, and peer tutoring, and help develop independent study strategies.

#### Preparing Company Teachers

Having identified several of the things a reading teacher or company teacher might be expected to do, the final consideration here is the preparation of that person. The following recommendations, then, flow directly from the above analysis.

In order to prepare teachers for any adult reading program, traditional or non-traditional, it is quite

necessary that they have a strong background in the study of reading. This background should serve to familiarize them with the technical language, various methods, and materials used in teaching reading at several age/ability levels. Such knowledge provides a good base from which the teachers can extrapolate to new or different teaching situations. Beyond that, consideration must be given to the development of teacher competencies in at least four key areas.

First, the teacher needs to be able to analyze the needs of the reader in a given situation. Suppose, for example, that the problem is to prepare employees in an industrial setting to perform regular maintenance on an air conditioning system by using a factory manual. In order to be competent at the task, the employees must possess or develop the skills suitable for performing the tasks involved, so the teacher must analyze the tasks and the abilities of the readers.

Task analysis can be performed in several ways, two of which will be examined here. One approach would be for the teacher to interview management personnel and successful workers to determine what reading skills they feel are necessary. A better approach, similar to one used by Sticht and McFann (1975) would be to have LLT's and HLT's indicate what they read, the percentage of job time spent on it, and determine from a teacher-prepared checklist why the reading is done. From this type of task analysis, the teacher can determine specific, job-related reading needs, and their relative importance.

Next a sample of a reader's ability to handle the materials can be obtained from a cloze test constructed over the reading material, or from an informal skills test constructed from that same material. At that point, the teacher should have enough information available to prepare a systematic plan for the student's reading needs.

Further, the teacher must be able to formulate instructional objectives for the learners to achieve. Generally, the basic objective for company-related adult reading is to be able to read well enough to earn a living consistent with one's interests and abilities by successfully achieving job-related tasks. Within this framework, a large number of instructional objectives are possible. Certainly, attention must be

given to those objectives related to word recognition skills (especially job-related sight vocabulary), word meaning skills, and various comprehension skills. Hopefully, the objectives will call for student behaviors which indicate understanding of the material as well as the practical implications of knowing the material. One of the major keys in adult reading seems to be the ability to see the usefulness or applicability of that which is read.

Next, a program of instruction must be developed to provide the learner with the skills needed or desired. Methods for teaching reading skills to adults vary; some are based on sequential skills development, others use language experience, and still others use programmed or computer-assisted approaches. Research has not yet shown a truly superior method, suggesting that a teacher must be prepared to utilize a variety of techniques. The recommendation of these writers, generally, is that the most promising approach for the company teacher is to develop process skills in the ways explained by Singer and Donlan (1981), to be applied to the various learning materials. Further, the teacher needs to be very careful in the selection of instructional materials, as progress is more rapid if the materials are important to the reader. For example, a mechanic probably will respond better to relatively difficult repair manuals than to narrative materials written at his reading level.

Finally, there will be a continuing need to evaluate the effectiveness of each training program. Some determination must be made regarding the achievement of objectives by the reader, and the efficiency with which the reader utilized new skills or learning. The teacher of adult readers must have a good background in measurement, in knowing how to prepare instruments to measure performance, and in how to utilize existing instruments for measuring the skills being taught. Part of this background must relate to the development of the learning objectives. If the minimum acceptable performance was stated in each objective, there will be at least one clear means for judging performance and for determining the success of the instruction. Additional judgments may be made by supervisors, clients, and other teachers regarding the degree to which the learner has developed the given skill. The responsibility in preparing teachers to work with adult readers is to provide the teachers with enough

background to be able to evaluate program success, and with enough breadth of knowledge to be able to modify and improve programs that are not meeting the learner's needs.

A reasonable question that might be raised here is "Are teacher education programs currently providing the needed experiences for teachers of adult reading?" The answer is "Probably not." While many college and university programs have a course or two aimed at teaching reading in secondary schools or adult basic education, few--if any--have directed their attention to adults in non-traditional programs such as those described here. In fact, the evidence suggests that the majority of teachers in such programs are trained in elementary reading if they have any reading training at all. It seems reasonable to expect, however, that this situation will have to change. If the trend in secondary and post-secondary education continues to move more and more toward vocational/professional training, the kinds of programs needed now for non-traditional adult reading programs may very well become prototypes for high school teaching in the near future.

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# COGNITIVE STYLE: WHAT IT MEANS FOR PERSONALIZED READING INSTRUCTION

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No longer regarded by researchers as a simple set of recognizing and matching symbols, reading has come to be conceptualized as a complex and active operation in which individuals must employ their own thought and language competencies to process information (Wardhaugh 1969).

If reading is indeed a constructive process to which readers themselves make a significant contribution (Smith 1982) then two factors become imperative: the manner in which these contributions, or cognitive strategies, are activated must be examined; and, the extent to which these tendencies differ in individuals must be determined. Perhaps such study will result in improved reading instruction. To that end, this article will: (1) define that set of characteristics known as cognitive style; (2) suggest how these traits possibly influence reading behavior; and, (3) cite some of their ramifications for classroom reading instruction.

## What Is Cognitive Style?

Observation of human behavior reveals that individuals are seemingly predisposed to confront learning tasks in specific, identifiable, predictive ways. These persistent inclinations in perceiving, thinking, and problem solving are generally referred to in research literature as cognitive styles (Ohnmacht, 1970). Although many dimensions of cognitive style have surfaced as research constructs, for the purpose of this article only three will be described. Selected on the basis of their ramifications for reading behavior and instruction, these three are (1) conceptual tempo; one's rate of processing information; (2) locus of control; one's level of self-confidence and acceptance of personal responsibility for learning; and (3) mode of perceptual organization and conceptual categorization; one's degree of specificity employed in classifying information.

## Conceptual Tempo

A crucial factor in their attempt to read success-

fully is the rate at which readers habitually process information. To study this aspect of cognitive style, Kagan (1965) postulated a continuum of impulsive-reflective behavior. Readers who are extremely impulsive are characterized by careless scanning of stimuli and minimal anxiety over incorrect or uncertain responses. Reflective readers, however, tend to conduct a careful search of the text, are overtly concerned about making mistakes, and become quite anxious over receiving approval from their peers or adults.

### Locus of Control

A second possible facet of cognitive style essentially concerns which area of attention claims more of the readers' confidence--their own ability to cope with the stimuli on the page or the nature of the printed page itself. More specifically, how much confidence readers have in themselves, especially how much they believe they can control their own destiny, and how much responsibility they tend to accept for their own learning--in short, their locus of cognitive control--can be detected in a behavioral sampling of their reading. Whether the stimuli (written discourses) or the learners' concept of their own ability receives a greater amount of attention has been studied by Witkin (1962), who called this construct field-dependent/field-independent. In reading, the field (intended stimulus) is the page of print, and a learner's experiential background largely represents the non-field (learner's being, or experiential background brought to the page.).

Learning to read, then, demands utilization not only of the visual cues available in and around words (field-dependence) but also of the nonvisual information or personal characteristics of the reader/learner (field-independence). Because some readers seem to rely on cue systems "within themselves" more than on the cue systems within words (phonics generalizations, conventional spelling patterns, etc.), these loci of control appear to be partial explanation for differential regard for the printed page. Some persons seem to almost totally ignore the printed page while others appear to devote extreme allegiance to it.

### Organizational Strategies

A third dimension of cognitive style pertains to the degree of specificity the reader/learner employs in organizing percepts and categorizing concepts. For

example, when readers are typically able to differentiate and analyze those stimuli (some form classes such as nouns, verbs, and certain adjectives) needed for interpretation while simultaneously disregarding relatively nonessential information (certain inflectional endings, prepositions, articles, and conjunctions) available in a total pattern, they are showing an analytic cognitive style. Indeed, not all learners seem to prefer this mode of perceptual organization and conceptual categorization; non-analytic readers, who tend to use global categories for classifying are relational in cognitive style.

#### How Does Cognitive Style Influence Reading Behavior?

That cognitive style exerts influence on reading behavior has been contended in research (Kagan, Moss & Sigel, 1963; Kagan, Rossman, Day, Albert & Phillips, 1964; Santostefano, Rutledge, & Randall, 1965; Serafica & Sigel, 1970). One implication of cognitive style inquiry is that individual children approach the reading task with their own established patterns for coping with external stimuli, the printed page being no exception. The manner in which these young readers characteristically internalize printed words thereby attaching meaningfulness will be regulated by these personalized cognitive tendencies. For in relation to their environment, these individuals are the same perceptual creatures when they read as they are when engaged in any other visual-cognitive task.

#### What Does Cognitive Style Demand of Teaching?

Although the dimensions of cognitive style cited above are by no means exhaustive, all three--tendency toward either reflective or impulsive responses, tendency toward either internal or external behavior, and tendency toward either relational or analytic treatment of stimuli--should concern anyone who dares to teach children how to read. To be ignorant of or apathetic toward readers' personal thinking/learning traits can result in their being perpetually punished just for being true to their own cognitive style.

Several ramifications for reading instruction have evolved from research on cognitive style, some of which are the following:

1. Identification of cognitive style should become an inherent component of diagnostic testing programs in reading. Incorporating such a practice might ultimately

ascertain whether all poor readers manifest a particular cognitive style. Confirmation of a possible commonality would aid in initially grouping/placing students for personalized instruction. This observance could mean the difference in whether certain students are properly or improperly placed throughout their scholastic terms, in some instances.

2. Cognitive style tests might be better predictors of reading success than are intelligence tests. Evidence for variation in cognitive functioning has been verified experimentally (Robeck & Wilson, 1974) by observing the tendency of persons of the same intellectual level (IQ score) to deal differently ("IQ function") with cognitive tasks. This renders intelligence tests relatively weak as indicants of reading aptitude.

3. Some dimensions of cognitive style appear to be more importantly related to early reading than to later stages of reading. As to which style will produce the better reader, it is difficult to predict. However, Kagan, Moss, and Sigel (1963) have hypothesized that analytic processors are more likely to realize early success in reading than are their more non-analytic counterparts. This contention is logical in that early encounters with printed discourse in formalized instructional settings typically require differentiation and analysis of similar-appearing stimuli, as evidenced in cat versus rat, saw versus was, and then versus them. Attention to such minute details automatically militates against non-analytic perceivers.

4. No proof exists for a universal hierarchy of reading skills with respect to either word recognition or comprehension. For example, reflective learners tend to be more accurate in word recognition than impulsive learners. Also, success in reading comprehension seems more closely related to field-independence than to field-dependence. As long as readers differ with respect to cognitive style, a taxonomy of skills will not be the same hierarchically for some learners as for others; reading instruction must be based on heteroarchical development. Nevertheless, skills mastery programs are predicated on the notion of a universal hierarchy of skills involved in reading behavior.

5. It is precarious to overemphasize rate of reading. Different cognitive styles might be simultaneously thwarted in the classroom. For instance, reflective readers are constantly chided by their teachers for

being slow in completing assignments, whereas at the same time impulsive readers are being scolded for committing excessive errors as a result of attempting to finish too hastily. The wisest route seems to be a minimal amount of attention to rate of reading.

6. The school's value system is often guilty of sex discrimination. Although students differ ability-wise on the basis of gender, curricular demands are seldom, if ever, tempered in light of this evidence. For instance, research has shown that girls are more field-dependent than boys (Kagan, Moss & Sigel, 1970). On the basis of such data, expectations should not be the same for male and female students.

7. All students should not be required to submit to the same response mode. Since some cognitive styles are not amenable to all manners of responding to questions, test items, and other prescribed tasks, it is imperative that all students be accepted as they are. This acceptance includes being allowed to progress at their own rate (see #5 above) as well as being permitted to express themselves in a manner which is facilitative for them as individual learners. Respecting such individuality promotes a need for certain instructional modifications in the classroom. For example, consistently unchanged formats for examinations are potentially unfair to particular students who possess a particular cognitive style. Likewise, lack of flexibility in certain classroom activities tends to honor some response modes while perpetually neglecting others.

### Conclusions

Individual differences cannot be denied. Cognitive styles account for important differences in the manner whereby children encounter the printed page. Thus, insofar as possible, programs intended for deficient readers should include strategies for increasing the flexibility of preferred cognitive tendencies without unduly coercing students to adopt a particular style that is inappropriate, perhaps harmful, for them.

Whether it transpires in a group setting or in an individualized situation, personalized reading instruction is imperative. Cognitive style demands it, for expediency as well as for fairness. Skills mastery programs, with meticulous attention to visual aspects of content and virtual neglect of individual differences, are adversaries of cognitive style and, consequently, high-risk attempts to improve children's reading.

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# PICTURE THIS: USING IMAGERY AS A READING COMPREHENSION STRATEGY

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Have you ever been so caught up in a book or so interested in a descriptive piece of writing that you create a mental picture of what you read? Imagery, this ability to represent in visual images episodes from written language, is a powerful tool that many readers intuitively use to aid their reading comprehension.

Yet, surprisingly, imagery does not appear to be a reading strategy that is fostered to any great extent in the schools. A survey of most reading methods textbooks revealed little mention of imagery as a reading technique to be developed in children. The few texts that do give it some mention usually suggest it as a means for teaching word recognition, suggesting that pictures be added to word cards. It is a rare text that gives the teacher advice in using imagery as an instructional strategy for reading comprehension.

Research of the past few years seems to suggest that imagery can be used as an effective instructional tool. It is the purpose of this paper to review the promising work in the connection between imagery and reading which has been going on recently. We may thus find ways in which research findings can be turned into productive classroom practices to aid reading comprehension.

## Imagery

Foss and Hakes (1978) define imagery as an ability to internally propose and construct representations of external objects or events. In terms of language or reading this could be an internal representation of either the sounds and written symbols or the underlying meaning. Generally, it is the meaning that is represented in an internal visual display.

Piaget and Inhelder (1969) see certain similarities between imagery and language. Both are manifestations of the symbolic function in humans. Both allow for an internal representation of something from the external world. Unlike language, however, imagery is made up of symbols that can be different for each individual.

Language, on the other hand, represents with signs. Signs are conventions or uniform symbols among groups of people. Language can only represent concepts or concrete objects. Imagery, through its ability to represent objects and the past perceptual experience of the person, can play a complementary role to language in assisting comprehension.

Winn (1980) suggests that stimuli perceptions (e.g., reading) can be encoded differentially within a person's cognitive structure depending upon the purpose for which the information is to be put to use. When the task is recall and manipulation of data the information tends to be coded as images. When the task requires the learning of the meaningful connection between logical concepts the information tends to be encoded in sequential word-like structures. And when the task requires comparisons between visual and verbal information, or when the learners must solve relatively complex problems on the basis of visual information, then the information tends to be encoded propositionally. Propositions are very abstract representations of information that encode concepts and the relationships between them. Thus, it appears that imagery may be optimal for certain types of comprehension. Winn suggests that imagery is best suited for recall and manipulation of a particular information set.

#### Imagery and Comprehension

Several studies over the past few years have strongly suggested that imagery can play a positive role in aiding reading comprehension. In one study, Guttman, Levin, and Pressley (1977) read stories to kindergarten, second and third-grade children under various conditions. These conditions were sets of pictures that only partially represented the text, instructions to create internal images as the text was read, and a control condition of no image instructions and no pictures. The kindergarten children were able to remember more of the texts presented with the full pictures only. However, as the children increased in age their ability to use partial pictures and internal images to remember texts also increased relative to the control condition. This tends to support Piaget and Inhelder's (1969) argument that children's ability to image becomes more sophisticated over time.

In a study of reading behavior Lesgold, McCormick, and Golinkoff (1975) instructed third and fourth-grade



students to draw simple cartoons of ideas and events depicted in stories after they read them. Later they instructed the students to construct mental images ("imagine the cartoons") of stories. The students instructed in the imagery strategy and reminded to use it remembered more than students receiving a more general non-imagery training. Pressley (1976) found that a training session in internal image construction of only 20 minutes aided the comprehension of eight-year-old children reading a 950 word story. The experimental training consisted of instructing the children to make up a separate picture in their heads for six orally presented sentences. Following each sentence they were shown an example of a well-formed image for the sentence.

In a similar set of studies with older students (college and secondary), Rasco, Tennyson, and Boutwell (1975) found that instructions to form images and/or use drawings aided the comprehension of reading passages (400 to 2500 words) for all groups. The least effective condition included neither imagery nor drawings. Kulhavy and Swanson (1975) instructed fifth- and sixth-grade children to create mental images as they read a 20 paragraph text and took an accompanying test. A second group was instructed only to read carefully. Immediate tests of comprehension tended to favor the imagery group, though not significantly. However, a delayed posttest one week later demonstrated that the imagery group recalled significantly more than the non-imagery group. They concluded that students will remember more of a text that they read if they try to construct mental images during their reading.

Anderson and Kulhavy (1972) found that high school seniors instructed to form mental images while reading a 2,000 word text passage learned no more than those students asked only to read carefully. However, on post experimental analysis it was found that half of the control group used imagery while one third of the imagery group did not.

Anderson and Hidde (1971) gave students sentences to rate, half the group by pronunciability and the other half by imagery evoking value. Later they were asked to recall the verbs and objects of the sentences when presented with the subjects. The group receiving the imagery instructions recalled over three times as many words as the pronunciability group. They argued that the imagery prompt facilitated learning by causing the subjects to process the sentences in a more meaningful fashion.

Anderson (1971), in two experiments, asked college students to recall the subject noun in a series of sentences they previously heard. The stimulus was either the verbatim predicate of the sentence or its paraphrase.

The group instructed to use imagery had consistently higher levels of recall than the group that was told simply to repeat the stimuli to themselves.

Moore (1983) compared children's ability to integrate meanings from the text (semantic information) involving several experimental conditions. One comparison involved a read-sentence only condition and a read-sentence with instructions to produce images and an awareness of subsequent tasks condition. The children in the task awareness plus imagery group integrated the paragraph information (i.e., were able to select true inferences from the text) significantly better than the children in the read-sentence only group. Further, Moore found that showing pictures related to the text after the reading task helped another group in integrating the information they had read.

Steingart and Glock (1979) studied the effects of imagery instructions and text organizations on what is learned from reading a passage. Three types of text organizations were used: scrambled, designated referent (i.e. each paragraph had only one referent), and attribute (i.e. paragraphs were grouped by particular attribute sets). Regardless of the text organization, the subjects instructed to form composite images of objects in the passages recalled significantly more correct text relations than subjects instructed to repeat the information to themselves.

Several studies investigated the use of imagery with differential aspects of subjects. Rohwer and Matz (1975) had high SES white and low SES Black fourth-grade students listen to three stories either accompanied by the printed text or a pictorial version of the story. All children who saw the pictures had better comprehension than those who saw the printed text. The effect, however, was far greater for the Black students. Further, the Black children who saw the pictures did markedly better on verifying inferences than their peers who saw the print. Overall, the pictures reduced the comprehension differential between the Black and white samples.

Levin (1973) found that visual imagery instructions (e.g. think of a picture corresponding to the sentence read) was more beneficial on a reading comprehension task for poor comprehenders with good vocabulary skills

than poor comprehenders with correspondingly low vocabulary scores on standardized tests. Indeed, the readers with adequate vocabulary skills using imagery read at a slightly higher level than good readers in the reading without imagery condition. This suggests that imagery helps those readers who have difficulty in obtaining and organizing meaning from texts. McCoy and Weber (1981) compared the abilities of normal and learning disabled readers to image texts. Their results suggest that learning disabled children have a smaller image capacity than normal children.

Several studies that investigated the use of pictures on orally presented prose materials have been reviewed by Levin and Lesgold (1978). They conclude that there is a great deal of empirical evidence that supports the use of pictures as a factual comprehension aid to fictional materials presented to children. They caution that the pictures must convey the same information as the text. The positive effects of pictures tend to generalize across various student characteristics and methods of presentation. In a similar review on the use of illustrations in aiding reading comprehension Schallert (1980) also reports that illustrations can aid comprehension. In fact, her review extends the conditions that Levin and Lesgold (1978) set under which illustrations can be beneficial. She notes "that illustrations benefited reading as well as listening comprehension, adults as well as children, expository as well as narrative prose, and nonredundant as well as redundant text" (p. 519).

Finally, several studies have looked at the comprehensibility of texts of various image-inducing potential. In a study by Montague and Carter (1973) subjects read one of two versions of four concrete narrative paragraphs. The versions were different in their image-evoking potential. The versions with greater vividness potential produced higher levels of recall. Jorgenson and Kintsch (1973) had subjects verify the truth or falseness of 39 sentences. They found that high-imagery sentences were verified more quickly than low-imagery sentences regardless of instructions to use or not to use imagery. They concluded that image utilization is a natural and effective strategy for subjects in verifying tasks.

### Discussion and Implications

The evidence presented here seems to suggest that an imagery strategy can play an important role in aiding children's comprehension. Pressley (1977) feels that

children can benefit from instruction to construct mental images for texts they hear or read. Further, the literature suggests that some types of children benefit more than others from imagery use. How, then, can the teacher use this information to benefit students? The rest of this paper will address this question.

Some of the ways to bring imagery into classroom instruction that are cited in the literature, such as having children recall their dreams, watch cloud formations, or image words and then spell them backwards (Forrest, 1981), need to be treated with a great deal of care. The teacher needs to keep in mind the reason for using imagery. In this case it is to aid reading comprehension. Imagery suggests, then, need to be evaluated in terms of this outcome. If a suggestion bears little relation to comprehension it should not be used.

Other classroom activities found in the literature seem more appropriate. Miccinati (1981), for example, suggests having students identify words from a list that they recognize in pictures, or produce images of specific sentences and paragraphs. Vaughan, Crawley and Mountain (1979) suggest a vocabulary scavenger hunt to develop images for words. The hunt is a type of word-sort activity in which children bring in pictures of items that represent particular words. The children manipulate these pictures in various ways, e.g., they might sort the items by size or function.

In general imagery activities should combine sign and symbol. More specifically, the activities should connect language to images and images to language. The language could be verbal as well as mental constructions. With this principle in mind a variety of activities to develop imagery as a comprehension strategy can be devised. Only a few are mentioned here:

1. Have a student read a text and make a drawing of what s/he read. A second student reads the text and reacts to the first student's drawing. After discussion, they develop a new drawing.
2. Have all students draw pictures from a text they read, and compare their drawings and reactions.
3. Have students write a text, after seeing a picture, that changes the still picture into a dynamic episode. Share the texts and have students decide which text most accurately represents the picture.
4. Help students to induce a particular mental image.

Then read a text to them. After reading, ask them in what ways they had to modify their image in order to accommodate the text. Ask if imagery helps them to recall.

5. Use pictures when reading a book to children. Try sharing the pictures before, during, and after reading.

6. Use facsimile artifacts related to a character in evoking images in children before or during a book. These aid in building a background of knowledge for the reading.

7. Allow students to see movies or filmstrips of stories prior to reading them. After the reading, discuss which version was preferred.

8. Use visual image activities as enjoyable culminating events to stories that are read. Use pictures or cartoon or dramatize certain events from the story.

9. Extend a completed story by having students draw an 8 or 12 frame cartoon of a succeeding chapter.

10. Describe an ordinary item, orally or in writing, by its elements. Have students draw a representation of the object from the verbal description. Compare drawings.

11. Show the students only a portion of a picture. Ask them to verbally, using oral or written language, describe the entire picture.

12. Have students hypothesize an upcoming chapter or episode in a book by drawing a cartoon of their predictions. Follow up with evaluations of their predictions.

Other activities can easily be generated with a bit of creative contemplation. The main point to remember is that the imaging should be connected to language use. This gives children opportunities to convert language into images and images into language. Activities such as these help to build flexibility and power in image and language use.

It should be noted that the use of imagery to facilitate reading comprehension with younger children should be approached with care. Children below eight or nine years of age seem unable to construct useful images without help (Wittrock, 1983).

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