The gains in knowledge about the nature of reading and how to most effectively teach it come from cognitive research. This booklet (in the form of a flipchart) synthesizes and summarizes much of the current research on effective instruction for improved literacy and greater student achievement. The booklet, a revised edition of "New Directions in Reading Instruction" (1988), contains almost all the topics in the original edition, as well as several new topics such as assessment, critical literacy, and instructional technology. The booklet is organized with a logical progression of topics divided into four sections: What Students Know; What Students Do; What Teachers Know; and What Teachers Do. The learning strategies offered in the booklet are designed to help educators model and demonstrate good reading and learning practices that help students learn more effectively. (Contains 41 references.) (NKA)
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Introduction

To meet the demands of literacy and learning for the 21st century, students must become effective readers and learners. Educational research gives definitive information on where to focus our instruction and offers effective methods that make a significant difference in student achievement and success. The gains in knowledge about the nature of reading and how to most effectively teach it come from cognitive research. This publication synthesizes and summarizes much of the current research on effective instruction for improved literacy and greater student achievement.

This publication is a revised edition of New Directions in Reading Instruction, published in 1988. Almost all the topics in the original edition appear again here, and several new topics have been added. Readers will appreciate new topics such as assessment, critical literacy, and instructional technology, which are important issues facing educators today. Another change from the original version is the way this flipchart is organized. Rather than organizing topics randomly, there is a logical progression of topics divided into four sections: What Students Know, What Students Do, What Teachers Know, What Teachers Do. These different sections are noted by the colors of the tabs.

All teachers must accept responsibility for helping students comprehend and learn from many sources of information. When this happens, student achievement improves dramatically. Teachers should provide direct instruction in strategies to help students become effective processors of information whether it is found in textbooks, on the Internet, in magazines and newspapers, or in other sources of information. A skilled reader is able to understand and analyze news stories, to interpret political advertisements, to complete income tax forms, and to put into context the daily abundance of information.

The learning strategies offered here are designed to help educators model and demonstrate good reading and learning practices that help students learn more effectively. Effective teaching strategies ensure that students internalize how to develop a plan for learning. They help students focus their attention on relevant information, synthesize that information, and integrate it with what is already known.

Bess Hinson
Orange County Public Schools
Orlando, Florida, USA
Early Literacy

Teachers now have a better understanding of how young children develop into readers and writers. Children learn best in the same ways they learn to walk and talk. Babies learn to talk in natural settings by hearing others talk and by encouragement in their early, often inaccurate, imitations of speech. In a similar way they learn to read and write by being read to, reading simple text, and experimenting with writing.

Major ideas about improving early literacy include

- focus on natural learning
- immerse children in a rich literacy environment
- value approximations in early attempts
- recognize different levels of development
- provide shared and independent reading and writing experiences
- integrate reading and writing
- acknowledge individuality in background experiences and readiness
- recognize the social aspects of learning
- observe intensely and with sensitivity (kid-watching)
- provide options

Fountas & Pinnell, 1996

Many educators recognize that the terms emergent and conventional may no longer be appropriate to describe the child as a literacy learner. In contrast to skills "emerging," it is now fully recognized that there is no beginning point. Even at a young age, children are legitimate writers and readers. Similarly, there can be no end point, no single boundary denoting conventionalized practices. Rather, literacy development begins early, is ongoing, and is continuous throughout a lifetime. Consequently, the term early literacy better reflects the nature of reading and writing as a developmental continuum rather than a skill that one acquires or does not.

Neuman & Roskos, 1998
Constructivist Learning Theory

The learning process is complex and unique to each individual. All learners filter new information through an existing system of prior knowledge, experiences, values, and beliefs. These individual and unique filters strongly influence how a student interprets and understands what is being taught.

Understanding of how the brain learns enables teachers to offer more effective instruction and improve student learning. Constructivist learning theory provides a philosophical base for change. What you teach becomes more important and relevant to students because of how you teach. Constructivist approaches can guide instructional practices for effective implementation of curriculum.

Learning requires more than memorizing information, more than simply reading or hearing information. For students to determine what the information means, lessons must be reorganized to allow students to interact with and process the information. Effective lessons must include opportunities for experimenting, discussing, examining models, reflecting, recognizing patterns, and creating personal explanations.

Vygotsky’s Learning Theory

Learning is response. When a person hears or reads something he has never heard before, it does not imprint on his brain the way print remains on paper. Instead, a person responds by searching through his mind for knowledge and understanding already has to see how he can make the old meaning connect to the new.

At this point he will need a mediator who can answer questions like these: “You mean it’s like...?” and, “Well, if it’s like that, does it mean that it works the same way?” Of course, as no two people have identical perceptions or life experiences, the way one sees, hears, touches, smells, and tastes his world will lead him to a unique point of view and interpretation of the world.

If the above is true, then what one reads gets taken into all levels of the mind and is processed almost instantly according to what the reader believes and knows. The text becomes the reader’s, and what one person reads will not have the same meaning for another person.

Learning is recursive. When one connects a new idea to something familiar in order to make meaning, he may have to go back and verify it, or else connect the idea to something different and rethink.

Brooks & Brooks, 1993

Vygotsky, 1934/1986
Engaged Learners

Literacy engagement develops over time. Learners become engaged in literacy as they grow more strategic, motivated, knowledgeable, and socially interactive. Strategies such as interpreting narrative themes, searching for information, and integrating ideas through multiple sources are the types of higher processes that must now be learned by all students. The engaged learner is motivated to learn higher order strategies and to become an involved, curious reader of all kinds of texts, including electronic texts. They are motivated to use their background experiences for gaining new knowledge about topics of personal importance. They are socially adept at sharing ideas, exchanging reading materials, and using successful strategies for reading and writing with peers.

Knowledgeable learners

→ are aware of when and how to use strategies
→ use background experiences to learn new topics
→ enjoy learning about familiar topics
→ develop meaning in groups
→ form well-integrated conceptual networks
→ link information into overarching themes
→ think critically about inconsistent information
→ share what they know with others
→ listen to peer perspectives
→ monitor their understanding as they learn
→ employ strategies to learn more effectively
→ discuss information with others
→ question themselves about what they know

Motivation

Motivation is indispensable to learning. You can motivate students in reading and writing by

- promoting involvement—being totally absorbed in the topic;
- encouraging curiosity and the desire to learn new ideas;
- creating challenge—tackling difficult tasks if they are interesting;
- communicating importance—believing the learning is valuable;
- demanding responsibility—working to fulfill expectations and requirements;
- praising self-efficacy—feeling good about one's self as a competent learner;
- providing choices during literacy instruction;
- assigning challenging tasks;
- allowing student control through open-ended tasks;
- providing opportunities to learn from and with others; and
- offering literacy tasks that support the construction of meaning.

Alvermann & Guthrie, 1994; Turner & Paris, 1995
Contrasting Good and Poor Readers

**Good readers**

*Before reading*
build their background knowledge on the subject, know their purpose for reading, and focus their complete attention on reading.

*During reading*
give their complete attention to the reading task, keep a constant check on their own understanding, monitor their reading comprehension and do it so often that it becomes automatic, and stop only to use a fix-up strategy when they do not understand.

*After reading*
deck if they have achieved their goal for reading, evaluate comprehension of what was read, summarize the major ideas in a graphic organizer, and seek additional information from outside sources.

**Poor readers**

*Before reading*
start reading without thinking about the subject, and do not know why they are reading.

*During reading*
do not know whether they understand or do not understand, do not monitor their own comprehension, and seldom use any of the fix-up strategies.

*After reading*
do not know what they have read, and do not follow reading with a comprehension self-check.

A dramatic improvement for poor readers results when they are taught to apply intervention strategies to content text.  
*Orange County Public Schools, 1986*
What Good Readers Do: From A to Z

A **Anticipate meaning.** Use their prior experience and information from the text to make predictions and speculations.

B **Become lifelong readers.** By being in the continued presence of reading/writing with parents, teachers, schoolmates, and friends, good readers develop lifelong literacy habits.

C **Choose their own reading material.** From the very early stages, good readers select a variety of books and types of literature to read.

D **Do not read every word or attend to every letter.** The more the mind works, the less hard the eyes need to work, as good readers focus on larger meaningful pieces of text.

E **Elaborate on important parts of the text.** Good readers generate or embellish during reading (summaries, inferences, or note-taking). These foster greater comprehension, recall, and use of the material read.

F **Focus on fluency by reading.** One of the best ways good readers become fluent is by wide reading.

G **Get books.** Good readers go to where books are. They use the library, browse in bookstores, borrow books from friends, and give books as gifts.

N **Negotiate meaning by integrating a number of cues or sources of information.** Good readers use and cross-check four types of cues: their knowledge of the world, oral language (what sounds right), word meanings, and the visual information in the text (letter/sound associations).

O **Often self-correct.** Good readers use monitoring and problem-solving strategies such as skipping unknown words, rereading, reading ahead, or using an outside source.

P **Paraphrase periodically.** During reading, good readers put into their own words the gist of what they’ve been reading.

Q **Question.** Good readers ask questions and then read to seek out answers to those questions.

R **Respond to literature.** Good readers gradually learn to make internal responses and personal reflections (thoughts and discussions) to literature by first making a variety of external responses (reconstructions, retellings, redrawings, and rewritings).

S **Share with others.** Good readers are always joining together to discuss and share what they are reading with others. Book habits are acquired naturally as a result of these interactions.
Have a purpose for reading. Good readers know that reading can be informative, enjoyable, enriching, and a useful tool to solve a variety of problems.

Imagine when they read. To facilitate comprehension, good readers make mental pictures when they read.

Just skim sometimes and judiciously read slowly at other times. Good readers shift speeds depending on their purpose and the type of book they are reading.

Know about their mental skills. Good readers continuously appraise and self-monitor their comprehension as they are reading. They are metacognitively aware of what they know, what they want to find out, and how to do that.

Listen to and enjoy stories and books being read aloud. An important factor in helping build the background for becoming a good reader is reading aloud to students of all ages.

Make personal connections with reading. Good readers make links and applications between the literature and their lives.

Take time to read. Logging lots of reading mileage, good readers take advantage of many opportunities in and out of class to read.

Use prior knowledge. Good readers use their background experiences.

Validate predictions. Good readers verify their predictions as they read. Comprehension equals confirmed predictions.

Write. Engaging in writing as it relates to reading is a routine good readers use to enhance both reading and writing ability.

Expect reading to make sense. As a priority, good readers have a meaning orientation to print, always seeking to make sense when they read.

Yearn to read. Always having a book and choosing to engage in reading during leisure time is a hallmark of a good reader.

Zero in on learning strategies when they need them. As they need strategies and skills to communicate with an author, good readers learn them in context of reading.

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Think Aloud

Think aloud is a procedure in which a teacher or student verbalizes the specific mental steps used to perform a comprehension task. Think alouds can be effective to clarify information in difficult reading materials, to create a visual image for written material, to connect background experiences to new information, and to recognize other clues that will help, such as pictures, graphics, and bold and italicized words.

Teachers should model the process to help students gain an understanding of how to make thinking public. To practice using think aloud, students can pair with each other as they work through difficult material. One partner can read and think aloud as the other partner listens. When one student thinks aloud, it is an opportunity for the other student to become aware of strategies used to comprehend the same information. The following are some examples of think alouds:

“When I read those words, the picture in my head is....”
“That is a new word. How can I find out what it means?”
“This part is confusing. Should I read it again or just keep going in case it is explained later?”

Davey, 1983

Directed Reading/Thinking Activity

Predicting—Reading—Proving

DRTA promotes active reading and greater comprehension whether students are reading fiction or content textbooks. It is a guided reading method that divides the text into shorter segments predetermined by the teacher.

Students become critical readers as they use background knowledge and prior experience to predict, which sets a purpose for their reading, and students use the text to validate or reject their predictions. After reading, they use the new information to adjust or refine their predictions.

For each section of text, students
- use clues in the title and pictures or graphics to predict what the section will be about,
- read silently to confirm predictions,
- discuss which predictions were accurate,
- find passages that prove or disprove the predictions, and
- make predictions for the next section based on what they have learned.

Richek, 1987; Stauffer, 1969
Writing to Learn

Writing is a powerful tool for thinking and learning. When students have to put ideas into their own words, they must process the information and understand it before they can explain it. Writing helps students learn and use the vocabulary and technical words related to a discipline.

Some ways to incorporate writing into all content areas are the following:

- Writing journals (also called learning logs) about content covered in class
- RAFT activities
- Reports
- Note taking
- Writing questions or problems for other students or groups to answer
- Songs or plays about content
- Persuasive letters about issues in the discipline
- Writing newspaper articles or editorials about content

RAFT

RAFT is the acronym for
R Role of the writer: Who are you?
A Audience for the writer: To whom are you writing?
F Format of the writing: What form will it take?
T Topic to be addressed in the writing: What are you writing about?

RAFT is an example of a writing activity that also can be used as an assessment. The technique provides a simple structure for writing that adds imagination, creativity, and motivation to learning. Students write from another point of view, to a specific audience, in a variety of formats.

Examples

<table>
<thead>
<tr>
<th>Role</th>
<th>Audience</th>
<th>Format</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fish</td>
<td>Farmer</td>
<td>Letter</td>
<td>Soil Erosion</td>
</tr>
<tr>
<td>Blood cell</td>
<td>Person</td>
<td>Advertisement</td>
<td>Nutrition</td>
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<tr>
<td>Colonist</td>
<td>English newspaper</td>
<td>Feature</td>
<td>Conditions in America</td>
</tr>
<tr>
<td>Chemist</td>
<td>Chemical company</td>
<td>Instructions</td>
<td>Combinations to avoid</td>
</tr>
<tr>
<td>Plant</td>
<td>Sun</td>
<td>Thank you note</td>
<td>Sun's role in growth</td>
</tr>
</tbody>
</table>

Buehl, 1995; Santa, 1988
Strategic Reading

Teachers and researchers have come to understand that reading is not simply the mastery of isolated skills that allow a reader to decode words and understand simple sentences. Effective reading requires the reader to use print as a basis for gathering information to make sense of his or her world. The reader needs to apply a number of strategies for understanding, including inference, generalization, and interpretation.

Reading has come to be characterized as a range of flexible, adaptable strategies rather than a scope and sequence of skills. Referring to the reading process as a skills-oriented process conjures an image of students employing small pieces of texts to work on isolated activities. The term strategies, however, refers to conscious and flexible plans that readers apply and adapt to particular tasks and texts.

The more students are aware of the processes and strategies they are employing to construct meaning, the more successful they will be at applying these processes and skills. Students' ability to monitor their own reading process, metacognition, is a key factor in achieving reading success. As students practice self-monitoring, they become aware of their own ways of processing knowledge.

**The Strategic Reader**

- Understands how different reading goals and various kinds of texts require particular strategies (analyzes)
- Identifies task and sets purpose (discriminates between reading to study for a test and reading for pleasure)
- Chooses appropriate strategies for the reading situation (plans)
  - Rereading, skimming, summarizing
  - Paraphrasing, predicting
  - Looking for important ideas
  - Testing understanding
  - Identifying pattern of test
  - Sequencing the events
  - Looking for relationships
  - Reading ahead for clarification
  - Mentally executing the directions
  - Relating new knowledge to prior knowledge
  - Summarizing
  - Questioning
  - Clarifying
  - Predicting
- Monitors comprehension, which involves
  - Knowing that comprehension is occurring (monitors)
  - Knowing what is being comprehended
  - Knowing how to repair/fix-up comprehension (regulates)
- Develops a positive attitude toward reading

*American College Testing, 1996*

*Cook, 1986; Paris, Lipson, & Wixson, 1983*
Reflection is critical to learning for deep understanding to occur. Some questions that help reflection might be:

- Did that make sense?
- What was the important part?
- What are the implications of this?
- Why did that happen?
- What worked, and why did it work?
- How can I use this?
- How does this relate to what I know?

Think-Pair-Share

One technique to aid reflection is Think-Pair-Share. Students process information and reflect on it at each step. They are asked to consider a problem or topic, then:

→ think silently for 2 minutes,
→ pair off and share thinking with a partner, and
→ share thinking with the whole group.

A variation of this method is Think-Pair-Square-Share, when two sets of pairs combine to share before sharing with the whole group.

McTighe, 1986
Role of the Teacher

The National Board for Professional Standards describes the qualities and roles of accomplished teachers as the following:

1. **Teachers are committed to students and their learning.** They are dedicated to making knowledge accessible to all students, recognizing individual differences and adjusting lessons to meet students' needs.

2. **Teachers know the subjects they teach and how to teach those subjects to their students.** They understand the subject and appreciate how their subject is created, organized, linked to other disciplines, and applied in real world settings.

3. **Teachers are responsible for managing and monitoring student learning.** Accomplished teachers command a range of generic instructional techniques, know when each is appropriate, and can implement them as needed.

4. **Teachers think systematically about their practice and learn from experience.** They critically examine their practice, seek to expand their repertoire, deepen their knowledge, sharpen their judgment, and adapt their teaching to new findings, ideas, and theories.

5. **Teachers are members of learning communities.** They work collaboratively with other professionals, parents, and the community for the students' benefit.

The role of the teacher becomes less of the giver of information, and more of the one who makes decisions and creates experiences in which students find meaning and problem-solve using several sources of information. Direct instruction—introducing and explaining new concepts—is critical.

Teachers must keep high expectations for all students. Students tend to detect even subtle messages about what a teacher believes about a student’s ability. With increasing diversity in classrooms, teachers must be constantly aware of the unspoken messages that are being sent to students. They should affirm every student’s ability to learn and encourage all students to reach for higher levels of achievement. Research shows that with proper instruction, many students who have not been successful in the past can and do learn if different and appropriate instructional methods are used.

**Teachers then become:**

- Models
- Coaches
- Facilitators
- Mediators
- Collaborators
- Decision Makers
- Learners

*BEST COPY AVAILABLE*
Teacher Decision Making

<table>
<thead>
<tr>
<th>Component</th>
<th>Teacher</th>
</tr>
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<tbody>
<tr>
<td>Plan</td>
<td>Knows what reading comprehension is</td>
</tr>
<tr>
<td></td>
<td>Analyzes text and task</td>
</tr>
<tr>
<td></td>
<td>Decides what students need to know</td>
</tr>
<tr>
<td></td>
<td>- Process (how-to-read-this-kind-of-text knowledge)</td>
</tr>
<tr>
<td></td>
<td>- Content (world knowledge)</td>
</tr>
<tr>
<td>Implement</td>
<td>Accesses prior knowledge</td>
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<tr>
<td></td>
<td>Teaches how to read specific text structures</td>
</tr>
<tr>
<td></td>
<td>Directs explanation models</td>
</tr>
<tr>
<td>Monitor</td>
<td>Constructs activities that make vivid the text/reading interaction</td>
</tr>
<tr>
<td></td>
<td>Provides feedback</td>
</tr>
<tr>
<td>Evaluate</td>
<td>Checks and interprets behaviors</td>
</tr>
<tr>
<td></td>
<td>- Move on?</td>
</tr>
<tr>
<td></td>
<td>- Reteach?</td>
</tr>
<tr>
<td></td>
<td>- More practice?</td>
</tr>
<tr>
<td></td>
<td>- Forget it!</td>
</tr>
</tbody>
</table>

Eight Questions to Ask About an Instructional Activity
1. Is it focused on meaning getting?
2. Does it encourage readers to view the process of reading as meaning getting?
3. Is it designed to produce fluent, efficient readers?
4. Does it employ "real" reading purposes and materials, i.e., provide for practice in actual reading settings?
5. Does it challenge readers to become actively engaged in reading, to take responsibility for their reading?
6. Are readers challenged to monitor their reading, to attend to its sensibleness?
7. Does it avoid fragmentary introduction of isolated skills?
8. Is the utility of skills or strategy clearly apparent?

Strategic teachers emphasize
- assistance during reading rather than procedure or assessment
- knowing how you know
- conscious connections to previous and future learning
- the context to which new skills will be applied
- making invisible cognitive skills tangible
- responding to student confusion with advice about how to think strategically

Lipson, 1985
Paris, 1985
Assessment

Assessment is a complex issue that keeps teachers and administrators searching for effective and valid information and methods. The multiple-choice format of many classroom and norm-referenced tests severely restricts the range of reading objectives that can be assessed and frequently do not closely relate to curriculum. Standardized tests are a reality in the world today; however, they should be considered only one measure and not be weighted too heavily in decision making. A broader and more reliable view of what a student can do is achieved when several types of assessments are included.

New ways to evaluate learning and growth are being explored. Multiple indicators from different types of assessment provide a more complete picture of students’ reading processes and achievement (Valencia, Hiebert, & Afflerbach, 1994). This multidimensional view of measurement includes the terms alternative, authentic, and performance assessment. It includes a variety of methods that are generally classroom-based and tied closely to curriculum. Multiple types of tests provide a broader view of students’ achievement.

These newer assessment methods include teacher observation, checklists, projects, demonstrations, presentations, and portfolios. Each of these assessments are performance based. Evaluating actual performance is more complex and requires a rubric, a set of criteria to be established.

Wiggins, 1993

Portfolios

- Contain collections of student works
- Show progress over time
- Match curriculum closely
- Include projects and performance
- Increase students’ involvement
- Provide time for reflection

Rubrics

- Set goals and expectations
- Establish criteria
- Increase objectivity
- Provide guidelines

17
Teaching Special Needs Students

Classrooms are filled with students of different cultures, backgrounds, abilities, handicaps, interests, family circumstances, learning styles, and needs. Meeting the needs of this diverse population with a single class challenges the teacher to provide accommodations for individual students. INCLUDE is a planning strategy that helps teachers meet the challenge.

INCLUDE

Identify classroom environmental, curricular, and instructional demands.

Note student learning styles and needs.

Check for areas of potential success.

Look for potential problem areas.

Use the information gathered to brainstorm instructional adaptations.

Decide which adaptations to implement.

Evaluate student progress.

Friend & Bursuck, 1996

Children with learning differences can be a true challenge in the classroom. One of the first steps a teacher must undertake is to gain an accurate understanding of what the students' needs are. Specialists, such as school psychologists and learning disabilities specialists, can provide fundamental information that is critical for determining whether a child has a different learning style or a specific learning disability and how extensive his or her learning needs are.

Teachers must then keep these students' particular needs in mind while attending to the needs of all students. Often a deeper understanding of learning difficulties will lead to the creation of strategies and compensation that can help other children in the classroom as well, because each student is bringing his or her own unique set of strengths and weaknesses to the class. Each classroom can have a specific set of strategies for supporting weaknesses while celebrating strengths. With time and persistence, a classroom of differences can become a classroom of learners, and a rewarding experience for all those involved.

Fielding, 1999
Teaching Inference

Students need to be taught how to make inferences. They need to realize that inferences are everywhere and that during the reading process an inference can be (and often must be) modified. The ten major inference types that follow cover the majority of students' reading needs.

1. LOCATION: "While we roared down the tracks, we could feel the bounce and sway."
2. AGENT: (occupation or pastime): "With clippers in one hand and scissors in the other, Chris was ready to begin the task."
3. TIME: "When the porch light burned out, the darkness was total."
4. ACTION: "Carol dribbled down the court and then passed the ball to Ann."
5. INSTRUMENT (tool or device): "With a steady hand, she put the buzzing device on the tooth."
6. CAUSE-EFFECT: "In the morning, we noticed that the trees were uprooted and homes were missing their rooftops."
7. OBJECT: "The broad wings were swept back in a V, and each held two powerful engines."
8. CATEGORY: "The Saab and Volvo were in the garage, and the Audi was in front."
9. PROBLEM-SOLUTION: "The side of his face was swollen, and his tooth ached."
10. FEELING-ATTITUDE: "While I marched past in the junior high band, my Dad cheered and his eyes filled with tears."

Johnson & Johnson, 1986

Five Direct Instruction Steps

1. TEACH. The teacher reads a passage and specifies the type of inference to be made. The teacher models/demonstrates, talks, exemplifies after reading the passage. The teacher identifies and lists Word Clues, and in a "think aloud" discussion explains just what the Word Clues clarified to help make the inference accurate.

2. PRACTICE. Students read a passage, individually or in groups. As they read they are to scrutinize/analyze the text to identify Word Clues that provide evidence to justify the inference category specified. List the students' Word Clues on the board. Encourage full and rich discussion as they talk about why each Word Clue made a contribution to the inferences.

3. APPLY. Identify the types of inference being applied. The students see (read) a passage, one line at a time, and jot down their inferences. After each line is exposed students reject/revise their inferences. At the conclusion students identify and list the Word Clues that allowed them to make the inferences. Listing Word Clues is important until students take ownership for this step in the task of inferencing.

4. EXTEND. Move into students' textbooks. Practice expository passages. Ask questions such as: "What kind of inference category is needed?" "What are the key words that lead to it?" "What is the inference we can make?" Extension takes students to the real world of their own textbooks.

5. ASSESS. Find out if students can do the inference procedure. "If Word Clues + experience = inference, what do you do if students don't have the prior knowledge or experiences?" The Semantic Mapping procedure (see page 27) helps call prior knowledge to the surface, builds bridges necessary to make inferences.

Johnson & Johnson, 1986
**Text Comprehension**

**Text Considerateness**
How easy or difficult a text is to understand is affected by:
- whether the text addresses one concept at a time or tries to explain several at once
- the clarity and coherence of what is explained
- whether the text is appropriate for the students and the purpose of the lesson
- whether the information is accurate and consistent

**Text Factors That Inhibit Comprehension**
- Referents that are ambiguous, distant, or indirect
- Concepts for which the reader lacks requisite background
- Events or ideas that are not relevant to the text

*Armbruster & Anderson, 1984*

**Changing the Face of Reading Comprehension Instruction**
Accept comprehension for what it is.
(Recognize the shift in the concept of reading.)
Change the way we ask questions.
Change the attitude and practices of teaching vocabulary.
Change the way we teach comprehension.
Develop curriculum that treats comprehension and composition as similar processes.
Change the teacher's role in the classroom.

*Pearson, 1985*

**Readability**

The ease with which a person can read printed materials, called readability, is related to many factors. Conventional readability formulas are based on length of sentences and the number of long or multisyllabic words.

Other factors to consider include:
- reader's prior knowledge
- reader's purpose
- reader's understanding of vocabulary
- reader's interests and attitudes

*Today's Cricket*
The batsmen were merciless against the bowlers. The bowlers placed their men in slips and covers, but to no avail. The batsmen hit one foul after another with an occasional six. Not once did a ball look like it would hit their stumps and be caught.

*Today's Cricket—Revised Version*
The men were at bat against the bowlers. They did not show any pity. The bowlers placed their men in slips. They placed their men in covers. It did not help. The batsmen hit a lot of fouls. They hit some sixes. No ball hit the stumps. No ball was caught.

The text that begins "The batsmen were merciless..." is difficult for readers who do not understand the game of cricket. Even when the readability is lowered in the revised version, the text still presents a problem because the vocabulary is technical to this game. Readers must have background knowledge of the game to understand the passage.

*Tierney & Pearson, 1981*

Difficulty of material also is related to:
- author's style of writing
- author's purpose
- organization of content
- physical layout of materials
Critical Literacy

Critical literacy is the awareness of the purposes of literacy in social systems and interactions. Specifically, people who are critically literate recognize that texts and their accompanying literacy practices (whether reading or writing) are tools of power. Texts and literacies are used to achieve particular purposes in social interactions. In addition, texts and literacies shape and are shaped by the interests and needs of different arrangements of people and by various institutional structures. To develop an awareness of the power of texts and literacies, children need to learn to ask questions that go beyond extracting information, comprehending an author's meaning, or even interpreting texts in light of their own experiences. Students need to ask about whose interests are being served (Alvermann, 1995/1996) by certain kinds of texts and literate practices and about how texts are used to position people in society in different—and often oppressive—ways.

Critical literacy involves the understanding that there are many different ways of knowing, being, acting, reading, and writing—what James Gee (1996) calls "Discourses"—and that some Discourses are more powerful than others in society. The ability to recognize that groups operate from different Discourses, that group membership is dependent on the ability to engage in the valued Discourse of the group, and that Discourses are often invisible or taken for granted is a central aspect of critical literacy. When one recognizes the existence and power of Discourses, then one can also see how texts and literacies are used to position people favorably or unfavorably in social systems.

More is involved in critical literacy than just awareness, however. Critically literate people engage in the construction of alternative forms of discourse and text so that they might take action against oppression in their own lives and the lives of others. Interdisciplinary project-based learning that focuses on questions of importance to students, but that also challenges students to extend their understandings, provides opportunities for such awareness and action. The opportunity to engage in sustained inquiry on a concept across many disciplines raises awareness of how disciplinary Discourses (such as science or history) compete for power and position people in certain ways.

Elizabeth B. Moje
University of Michigan
Ann Arbor, Michigan, USA
In short, there is a parallel to Michael Halliday's (1978) formulation about the reasons for the centrality of language study in schools: We need to learn technology, to learn through technology, and to learn about technology.

As we delve deeper into the question of technologies for education, many seek to understand characteristics and implications of new technologies:

- computational visualization
- remote instrumentation
- intelligent agents
- MOOs and MUDs
- collaboratories
- telementoring
- image processing
- virtual reality theaters
- embedded systems
- speech recognition/generation
- intelligent tutors
- digital video
- wearable computers

This future-oriented strategy is a necessary component of assessing what capabilities the new technologies afford. However, there is a past-oriented strategy that may be equally revealing about the shape of future educational practices. Teachers must re-examine foundational ideas in education that may provide insights for efforts to expand and transform education in the coming information age.

Bruce, 1998
### Best Practice in Teaching Reading

#### Increase
- Reading aloud to students
- Time for independent reading
- Children's choice of their own reading material
- Exposing children to a wide and rich range of literature
- Teacher modeling and discussing his/her own reading processes
  - (Think Alouds)
- Primary instructional emphasis on comprehension
- Teaching reading as a process:
  - Use strategies that activate prior knowledge
  - Help students make and test predictions
  - Structure help during lessons
  - Provide after-reading applications
- Social, collaborative activities with much discussion and interaction
- Grouping by interests or book choices
- Silent reading followed by discussion
- Teaching skills in the context of whole and meaningful literature
- Writing before and after reading
- Allow phonetic spelling in children's early writing
- Use of reading in content fields (e.g., historical novels in social studies)
- Evaluation that focuses on holistic, higher order thinking processes
- Measuring success of reading program by student's reading habits, attitudes, and comprehension

#### Decrease
- Exclusive stress on whole-class or reading-group activities
- Teacher selection of all reading materials for individuals or groups
- Relying on selections in basal reader
- Teacher keeping his or her own tastes and habits private
- Primary instructional emphasis on reading subskills such as phonics, word analysis, syllabication
- Teaching reading as a single, one-step act
- Solitary seatwork
- Grouping by reading level
- Round-robin oral reading
- Teaching isolated skills in phonics workbooks or drills
- Little or no chance to write
- Punishing preconventional spelling in student's early writing
- Segregation of reading to reading time
- Evaluation focused on individual, low-level subskills
- Measuring the success of the reading program only by test scores

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*Zemelman, Daniels, & Hyde, 1993*
Best Practice in Teaching Writing

Increase

Student ownership and responsibility by
- helping students choose their own topics and goals for instruction
- using brief teacher-student conferences
- teaching students to review their own progress

Class time spent on writing whole, original pieces through
- establishing real purposes for writing, and students’ involvement in the task
- instruction in, and support for, all stages of the writing process
- prewriting, drafting, revising, editing

Teacher modeling writing—drafting, revising, sharing—as a fellow author and as a demonstrator of processes

Learning of grammar and mechanics in context, at the editing stage, and as items are needed

Writing for real audiences, publishing for the class and for wider community

Making the classroom a supportive setting for shared learning using
- active exchange and valuing of student ideas
- collaborative small-group work
- conferences and peer critiquing that give responsibility for improvement to authors

Writing across the curriculum as a tool for learning

Constructive and efficient evaluation that involves
- brief informal oral responses as students work
- thorough grading of just a few student-selected, polished pieces
- focus on a few errors at a time
- cumulative view of growth and self-evaluation
- encouragement of risk taking and honest expression

Decrease

Teacher control of decision making by
- teacher deciding all the writing topics
- suggestions for improvement dictated by the teacher
- learning objectives determined by the teacher alone
- instruction given as a whole-class activity

Time spent on isolated drills on subskills of grammar, vocabulary, spelling, paragraphing, or penmanship

Writing assignments given briefly, with no context or purpose, completed in one step

Teacher talks about writing but never writes or shares own work

Isolated grammar lessons, given in order determined by textbook, before writing is begun

Assignment read only by the teacher

Devaluation of student ideas through
- students viewed as lacking knowledge and language abilities
- sense of class as competing individuals
- work with fellow students viewed as cheating or disruptive

Writing taught only during “language arts” period (i.e., infrequently)

Evaluation as negative burden for teacher and student by
- marking all papers heavily for errors, making teacher a bottleneck
- teacher editing papers, and only after completed, rather than student making improvements
- grading seen as punitive, focused on errors, not growth

Zemelman, Daniels, & Hyde, 1993
**Questioning**

*Questions are an* important part of classroom interaction and can help students achieve a deeper understanding of a text. But, students learn what to focus on by the type of questions they are asked. Therefore, teachers must consciously ask questions that go beyond the literal level and lead students into higher level thinking.

One of the most powerful learning techniques is self-questioning. When students are in charge of the questions, they take control of information and become active learners. Students must be taught to question themselves about their learning. They must learn about the levels of questions and practice asking questions from all levels.

Classroom methods to help students understand and practice questioning include the following:

- **Questioning the Author** (Beck, McKeown, Hamilton, & Kucan, 1997), in which students assume greater responsibility for their learning by actively interacting with text and engaging in discussions about the meaning of text.
- **Explaining the difference between thin (literal) and fat (higher level) questions** for young students, Question-Answer Relationships (QAR) (Raphael, 1982), or Bloom’s Taxonomy for older students.
- Assigning a student to ask the questions after a short, silent reading passage.
- Taking turns asking questions in small groups.
- Working in small groups to create questions to exchange with another group.
- Encouraging students to monitor their comprehension by constantly asking themselves questions as they read, such as “Do I understand this?”

**Question/Answer Relationships (QAR)**

*Types of Questions*

- **Right There**: The answer is found in one sentence that you can point to with one finger.
- **Think and Search**: The answer requires finding information in several places in the text and putting the information together.
- **In My Head**: The answer is not in the text, but must be found in the reader’s own background knowledge or experiences.

Questions need to be less on assessing comprehension and more on helping students grapple with text ideas as they construct meaning. They should help and guide students as they dig to make sense of the information. Learning to ask these types of questions will teach students to focus on quality and depth of meaning rather than superficial understanding.

*Beck et al., 1997*

Other strategies for asking questions to extend thinking and develop the technique of self-questioning included in this flipchart are Think Aloud (page 8), K-W-L Plus (page 25), Think-Pair-Share (page 11), Reflection (page 11), and Reciprocal Teaching (page 23).
Reciprocal Teaching

Reciprocal teaching promotes long-term learning by sharing responsibility for leading class discussion about what is being read. After watching the careful modeling and instruction by their teacher, students take turns being the teacher. They are taught four strategies: predicting, question generating, clarifying, and summarizing. Then students take charge and make the predictions, ask the questions, clarify difficult passages, and make summaries. Rich discussion and interaction that focuses on comprehension enables students to take control of their learning.

PREDICT—QUESTION—CLARIFY—SUMMARIZE

Procedure

• Teacher trains students in four strategies through modeling and demonstration.
• Students read short passages, observe and practice.
• Students begin leading the class in the four strategies.
• Teacher provides feedback and encouragement.
• Rich dialogue and discussion enhances students’ comprehension.

Considerations for successful implementation

• Discuss difficulties in text and reasons for using strategies that help overcome those difficulties.
• Provide an overview of strategies, carefully describing each step.
• Allow time for students to practice and learn each strategy while continuing to model the whole procedure.
• Transfer responsibility to the students as they gain confidence.
• Establish an atmosphere of friendly dialogue and commentary.

Students learn to understand difficult text as they

- predict what will happen next
- generate questions to ask
- clarify difficult sections in text
- restate what they read in a summary

Palincsar & Brown, 1986
**Frayer Model**

The Frayer Model is an example of a brainstorming and questioning technique teachers can use in teaching new word concepts. This procedure helps vocabulary acquisition and comprehension. Knowing a single definition for a word does not guarantee that students have the concept of the word. They need richer experiences with the word.

Using a Frayer Model, students are encouraged to contribute their own unique construction of knowledge as they offer examples, nonexamples, and their reasons for including these responses in analyzing the attributes of a concept. As the teacher prompts the class to brainstorm information to complete each quadrant of the model, the definition of the concept is refined.

How to use the Frayer Model form:
- Write the concept in the center circle.
- Start in any of the quadrants.
- Switch between quadrants as issues emerge or as ideas are dropped.
- Examples and essential characteristics must agree.
- Things may shift from side to side as definitions clarify.
- Discussion, questions, and debate stimulate higher order thinking and create deeper understanding.

### Frayer Model

<table>
<thead>
<tr>
<th>Essential Characteristics</th>
<th>Non-Essential Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>closed</td>
<td>number of sides (must be higher than 2 though)</td>
</tr>
<tr>
<td>plane figure</td>
<td>number of angles</td>
</tr>
<tr>
<td>straight sides</td>
<td>equilateral (all sides same length)</td>
</tr>
<tr>
<td>more than 2 sides</td>
<td>scalene (all sides different length)</td>
</tr>
<tr>
<td>2-dimensional</td>
<td>isosceles (at least 2 congruent sides)</td>
</tr>
<tr>
<td>made of line segments</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Examples</th>
<th>Non-Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>pentagon</td>
<td>circle</td>
</tr>
<tr>
<td>hexagon</td>
<td>cube</td>
</tr>
<tr>
<td>quadrilateral</td>
<td>cylinder</td>
</tr>
<tr>
<td>rectangle</td>
<td>sphere</td>
</tr>
<tr>
<td>square</td>
<td>cone</td>
</tr>
<tr>
<td>parallelogram</td>
<td>ray</td>
</tr>
<tr>
<td>triangle</td>
<td></td>
</tr>
<tr>
<td>square</td>
<td></td>
</tr>
<tr>
<td>rhombus</td>
<td></td>
</tr>
<tr>
<td>octagon</td>
<td></td>
</tr>
</tbody>
</table>

Cindy Pegram, Conway Middle School, Orlando, Florida, USA—adapted from Frayer, Frederick, & Klausmeier, 1969

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K-W-L Plus

K-W-L Plus is a reading-thinking strategy that focuses on student as learner. The title derives from the three principle components of K-W-L—recalling what is known; determining what students want to learn, and identifying what is learned—plus mapping text and summarizing information. Mapping and summarizing are added to K-W-L because writing and restructuring of text are powerful tools in helping students process information. The expanded strategy engages readers in constructing meaning from text and helps students to think critically about information as they organize, restructure, and apply what they have learned.

A ninth-grade disabled reader’s K-W-L worksheet on killer whales

<table>
<thead>
<tr>
<th>K (Know)</th>
<th>W (Want to Know)</th>
<th>L (Learned)</th>
</tr>
</thead>
<tbody>
<tr>
<td>They live in oceans.</td>
<td>Why do they attack people?</td>
<td>D—They are the biggest member of the dolphin family.</td>
</tr>
<tr>
<td>They are vicious.</td>
<td>How fast can they swim?</td>
<td>D—They weigh 10,000 pounds and get 30 feet long.</td>
</tr>
<tr>
<td>They eat each other.</td>
<td>What kind of fish do they eat?</td>
<td>F—They eat squid, seals, and other dolphins.</td>
</tr>
<tr>
<td>They are mammals.</td>
<td>What is their description?</td>
<td>A—They have good vision underwater.</td>
</tr>
<tr>
<td></td>
<td>How long do they live?</td>
<td>A—They are the second smartest animal on earth.</td>
</tr>
<tr>
<td></td>
<td>How do they breathe?</td>
<td>D—They breathe through blow holes.</td>
</tr>
</tbody>
</table>

Final category designations developed for column 4 information learned about killer whales: A = abilities, D = description, F = food, L = location.

Carr & Ogle, 1987

Students can easily produce maps from the K-W-L worksheet. The first step is to categorize the information listed under L. Students ask themselves what each statement describes and often discover more categories that can be used in future reading. The chart below shows how a student categorized each statement under L.

Students use the article title as the center of their map, and categories developed with the K-W-L worksheet become the map’s major concepts, with explanatory details subsumed under each. Lines show the relation of the main topic to the categories. All information categorized on the worksheet acts as supporting data on the map.

The ninth grader’s concept map

Abilities (2)
—kill for food
—detect pebble sized aspirin tablet in 30 feet of water
—find food in cloudy water
—echolocation

Description (1)
—warm blooded
—dolphin family
—second smartest animal
—next to man
—born alive
—10,000 lbs.
—30 feet long
—blow holes

Food (3)
—small dolphins
—carnivorous (meat eaters)
—400 lbs. salmon daily

Location (4)
—all oceans
—Sea World

(1) through (4) indicate the order of categories the student chose later for writing a summary.
Graphic Organizer

Graphic organizers are visuals that help learners process information they hear or read. Graphic organizers provide structure to order and summarize main ideas and their relationships to each other. Teachers can use this strategy in whole-class or small-group discussions to help students process new information and identify key concepts. These visual representations provide the rehearsal and elaboration processes necessary for transferring information into long-term memory. Examples of graphic organizers are time lines, diagrams, flowcharts, pyramid designs, outlines, cartoons, pictures, advance organizers, herringbone charts, feature analysis charts, webs, and chapter maps.

McTighe, 1986

Graphic Organizer

Is A

- Picture of a concept
- Way to provide meaning
- Theme with main ideas
- Visual of print
- Way to show relationships

Examples

- Structured overview
- Mapping
- Frayer model
- Feature analysis
- Pyramid design
- Frames

Venn Diagram

TUNDRA

DESERT

- LOCATED IN ARCTIC REGIONS
- HARSH CLIMATE
- VERY COLD
- LITTLE VEGETATION
- TEMPERATURES
- WATER IN FORM OF PERMAFROST

- GENERALLY FOUND IN EQUATORIAL REGIONS
- TREELESS PLAIN
- VERY HOT
- FEW PEOPLE LIVE
- NEAR ABSENCE OF WATER

Results

<table>
<thead>
<tr>
<th>Goal: English/Colonists</th>
<th>Goal: French/Indians</th>
</tr>
</thead>
<tbody>
<tr>
<td>To control Ohio Valley: Farm and Settle (Fertile land)</td>
<td>To control Ohio Valley: Fur Trade</td>
</tr>
</tbody>
</table>

Interaction - Conflict

<table>
<thead>
<tr>
<th>Actions</th>
<th>Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>British move into Ohio Valley to settle.</td>
<td>French refuse, attack British. Ft. necessary and destroy it.</td>
</tr>
<tr>
<td>Dinwiddie sends Washington to tell French to leave Washington tries to build fort.</td>
<td>French and Indians attack and defeat Braddock.</td>
</tr>
<tr>
<td>Braddock sent to take Ft. Duquesne.</td>
<td>Montcalm loses Quebec to Wolfe.</td>
</tr>
<tr>
<td>Wolfe sends armed traders.</td>
<td>English gain war.</td>
</tr>
<tr>
<td>Spain gives her Florida.</td>
<td>France - lost war.</td>
</tr>
<tr>
<td>England wants wealth.</td>
<td>- Lost Canada + all land in North America.</td>
</tr>
<tr>
<td>Colonists became united.</td>
<td>- Get right to fish off Newfoundland.</td>
</tr>
</tbody>
</table>

Results

<table>
<thead>
<tr>
<th>French:</th>
<th>Indians:</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Lost lands.</td>
<td>- Lost lives.</td>
</tr>
<tr>
<td>Jones et al., 1987—adapted by Mary Jane Serrick, Robinswood Middle School, Orlando, Florida, USA</td>
<td></td>
</tr>
</tbody>
</table>
Mapping

Mapping is a visual or graphic representation of key concepts/main ideas and supporting ideas/details in oral and written compositions, textbook chapters, stories, class discussions, and lectures. Mapping is a technique to use as an alternative to note taking and outlining. To develop a map,

- Identify a central purpose (this may be the title of a book, chapter, or topic of a lecture)
- Determine major idea (chapter or subheading)
- Determine supporting ideas from each major idea

Santeusanio, 1983

Sara Everson, Glenridge Middle School, Orlando, Florida, USA
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