STRATEGIC ENVIRONMENT

TACTIC:

Developing A Strategy Intervention

THE STRATEGIC INSTRUCTION MODEL

The University of Kansas
Institute for Research in Learning Disabilities
Lawrence, Kansas 66045

This overview material is based on the book TACTIC: Developing A Strategy Intervention by Edwin S. Ellis, B. Keith Lenz, & Frances L. Clark and will be published by EXCELLENTerprises, Inc. Some of the information is presented in an unedited form and is excerpted from a draft manuscript. Therefore, this information is for personal and privileged use in preparing presentations related to strategy interventions and is not for duplication, dissemination or citation.

Training Packaged Developed by
B. Keith Lenz, Frances L. Clark, & Edwin S. Ellis

TACTIC: Developing a Strategy Intervention

COMPONENTS	What's so strategic about strategies?	What's so strategic about strategies instruction?	How to create a new strategy	How to design instruction for the new strategy	How to evaluate the effectiveness of the new strategy
CONTENT	This section provides a detailed explanation of the critical features of effective strategies. The manner in which strategies are designed to facilitate self-instruction in the use of cognitive and metacognitive strategies is explained. Many examples of strategies are used to illustrate key concepts. This section provides the conceptual foundation necessary to understand what makes a strategy work so that teachers can develop their own strategies.	This section provides a detailed explanation of the critical features of effective strategy instruction. The focus is on delineating specific techniques for facilitating the acquisition and generalization of new strategies, as well as the critical assessment and feedback processes. This section provides the information necessary for teachers to design effective instructional procedures for the new strategy.	This section provides a step-by-step guide for designing the strategy intervention. It includes instructions for targeting specific setting demands, assembling resources, creating the steps to the new strategy, and designing assessment procedures to be used in conjunction with the instructional procedures. As a result of completing the worksheets in this section, teachers will produce a specific strategy.	This section provides step-by-step instruction for designing instructional procedures for teaching the new strategy as well as the selection of appropriate stimulus materials. As a result of completing the worksheets in this section, teachers will have lesson plans for each stage of facilitating acquisition and generalization of the new strategy.	This section provides a set of recommendations for how to evaluate the effectiveness of specific components of the strategy intervention. Common "bugs" to watch for and ways to eliminate these problems are identified. The appendix to this section contains specific step-by-step instructions on how to empirically validate the intervention using either time-series multiple baseline designs or pretest-posttest with control group designs.
SUGGESTIONS FOR USE IN A PRESERVICE TEACHER-TRAINING CLASS	These two sections could be required readings for a special education methods class that includes any strategy training.		These two sections could be used in a special education methods class following detailed training in the use of specific strategies designed by experts or a special education curriculum development class. Requiring preservice teachers to design and provide instruction in new strategies can be a very effective way of facilitating an in-depth knowledge of why strategies work and how to teach them. These sections can also be used during practica experiences to design strategy interventions for real life problems.		This section can be used in a special education methods class to facilitate a greater understanding of what to expect during initial attempts at teaching strategies. It is also useful as a means of enabling practicum teachers to develop problem solving skills related to self-monitoring instructional processes. It can also serve as an excellent vehicle for facilitating feedback during practica experiences.

TACTIC:
Developing A Strategy Intervention

COMPONENTS

What's So Strategic About Strategies?

What's So Strategic About Strategies Instruction?

How To Create a Strategy

How To Design Strategic Instruction

How to Evaluate A Strategy Intervention

TACTIC: Developing A Learning Strategy
PART 1

What's So Strategic About Strategies?

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Strategic Strategies

Key Features

Features Related to Strategy Content

1. A strategy contains a set of steps that lead to a specific outcome.

2. A strategy addresses a problem found in a key setting.

3. A strategy can be task specific, situation specific, or content specific.

4. A strategy enables an individual to use effective cognitive and metacognitive problem-solving tactics.

5. Each step in a strategy cues the student to do something.

Features Related to Strategy Design

6. The steps of a strategy are characterized by brevity and simplicity.

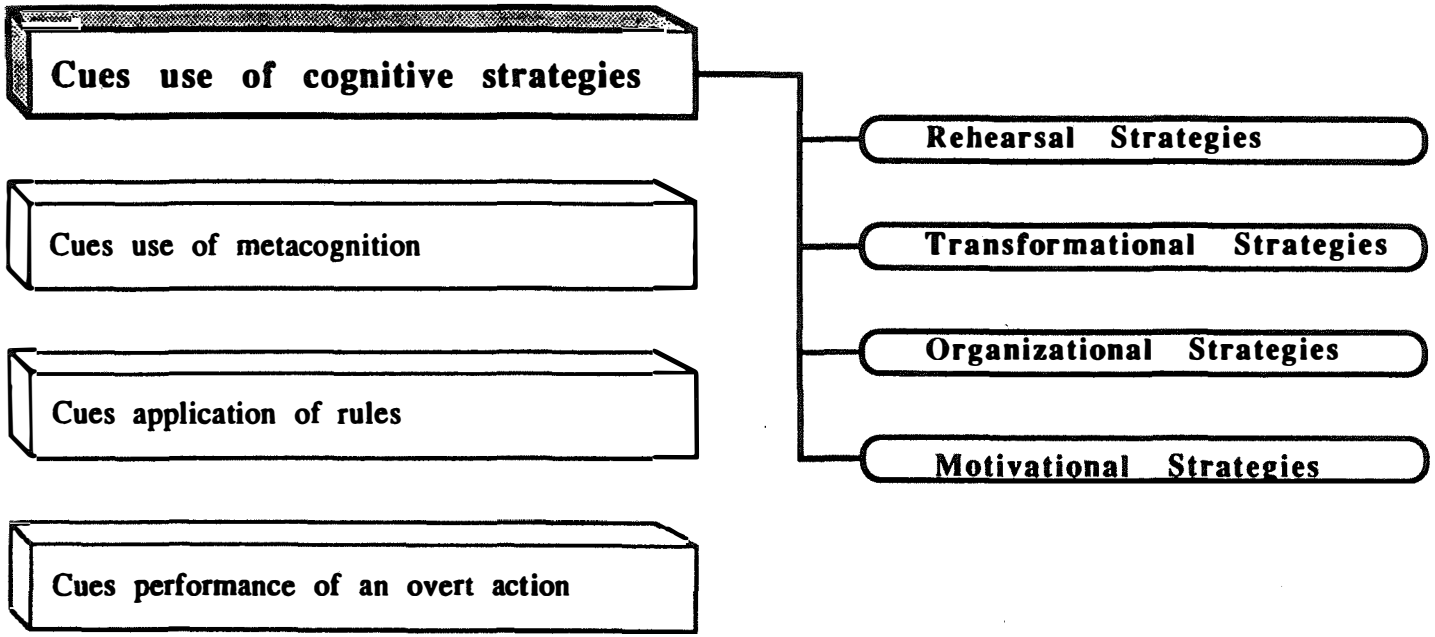
7. Each strategy step begins with a verb or a word directly related to the activity.

8. A strategy frequently incorporates a remembering system.

Each step cues the student to do something

- Cues use of cognitive strategies
- Cues use of metacognition
- Cues application of rules
- Cues performance of an overt action

Each step cues the student to do something



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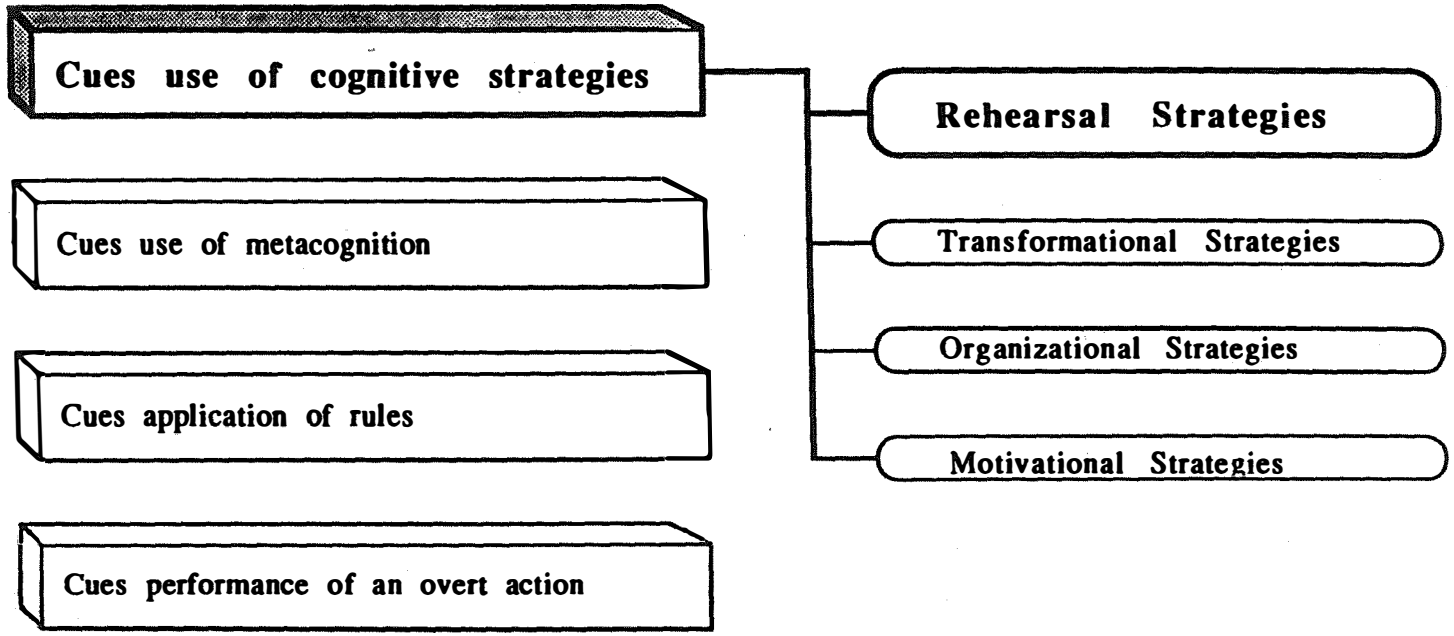

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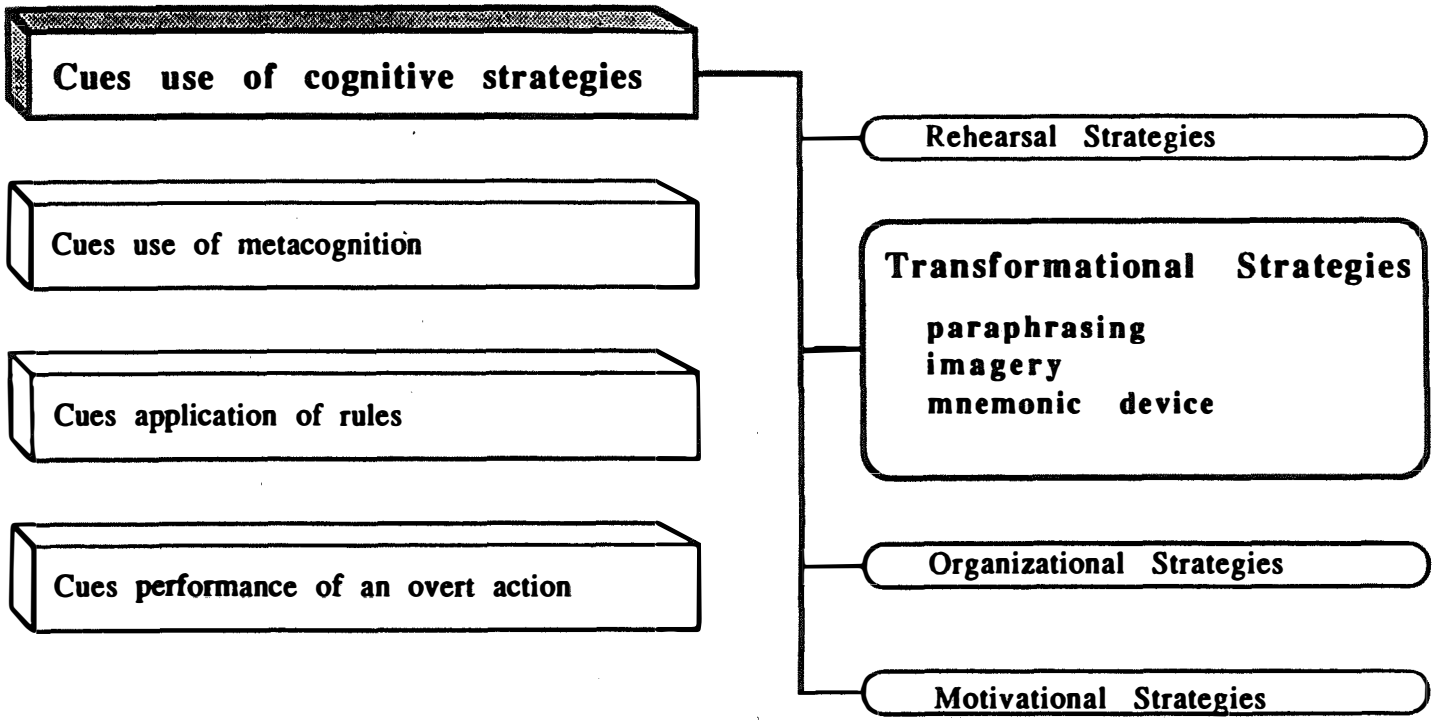

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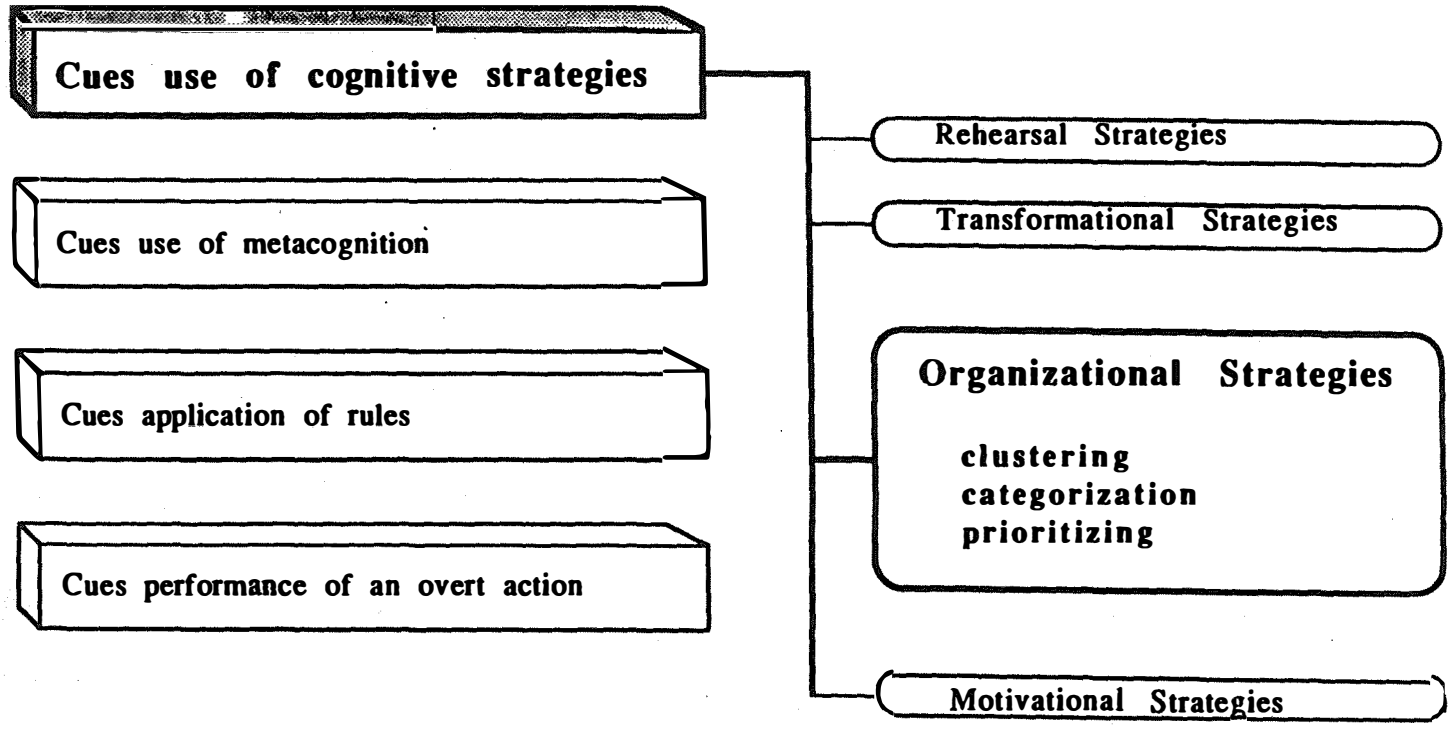

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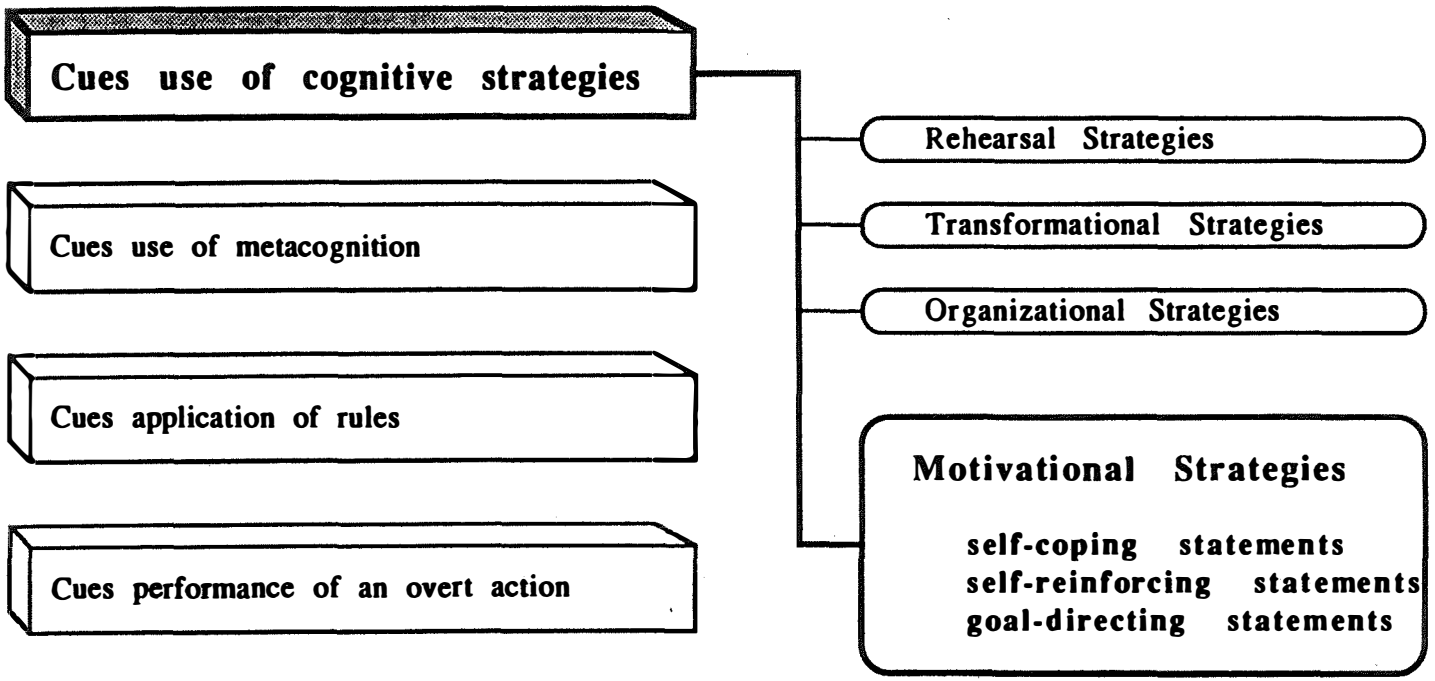

Each step cues the student to do something

Cues use of cognitive strategies

Cues use of metacognition

Cues application of rules

Cues performance of an overt action

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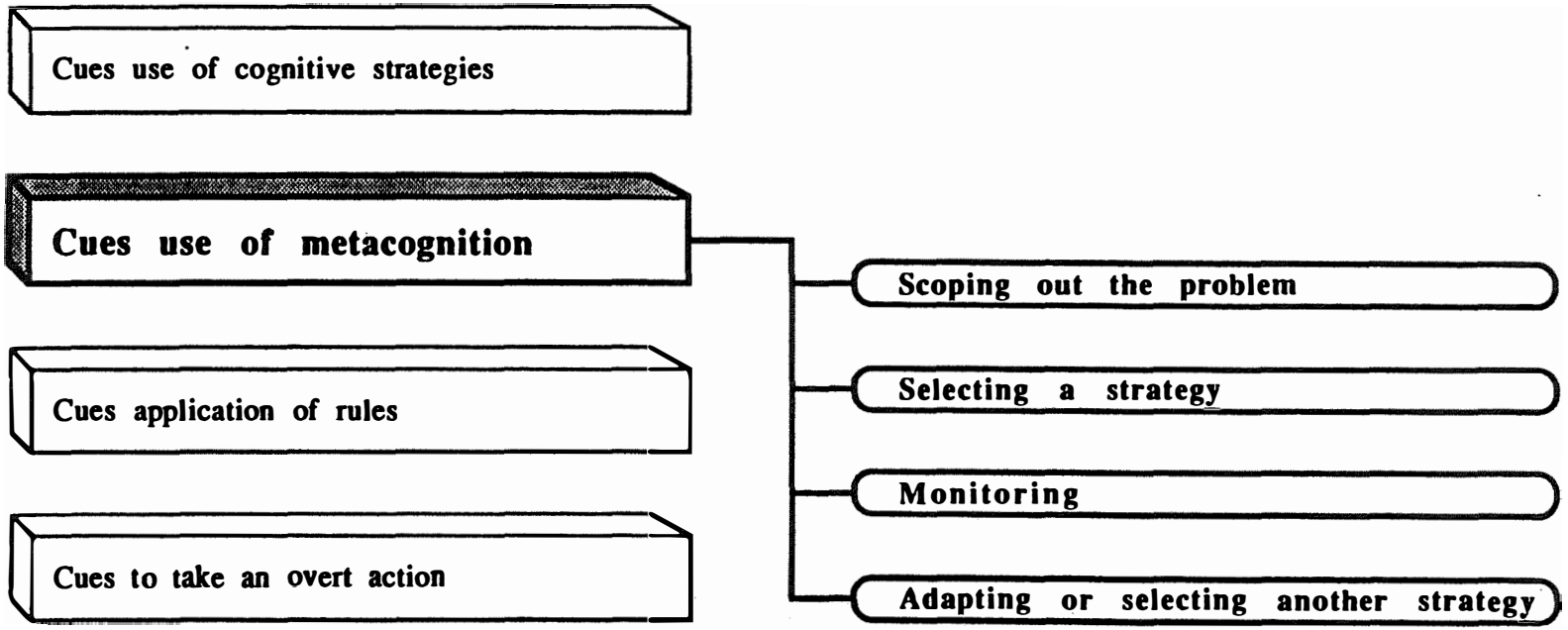

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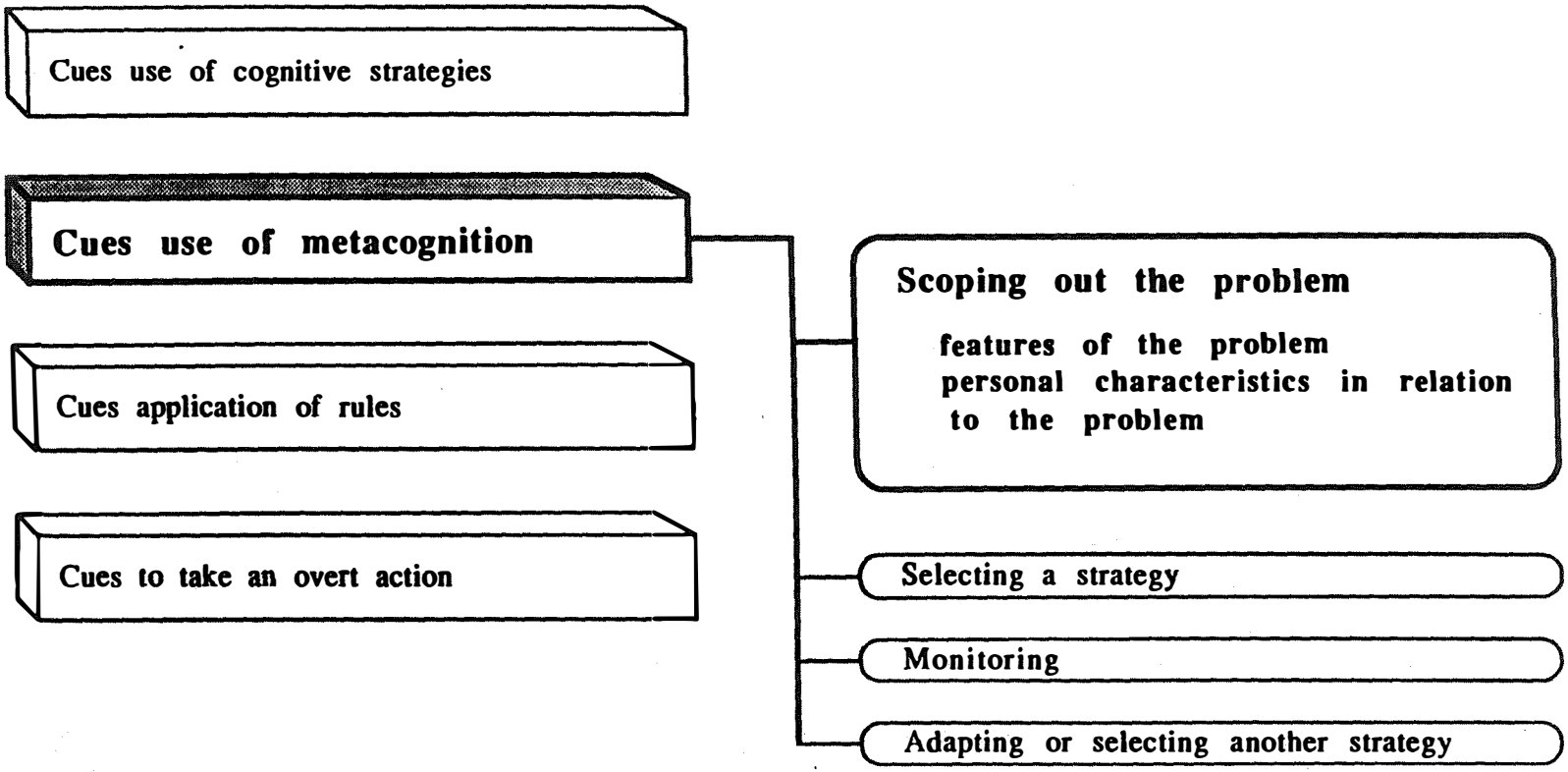

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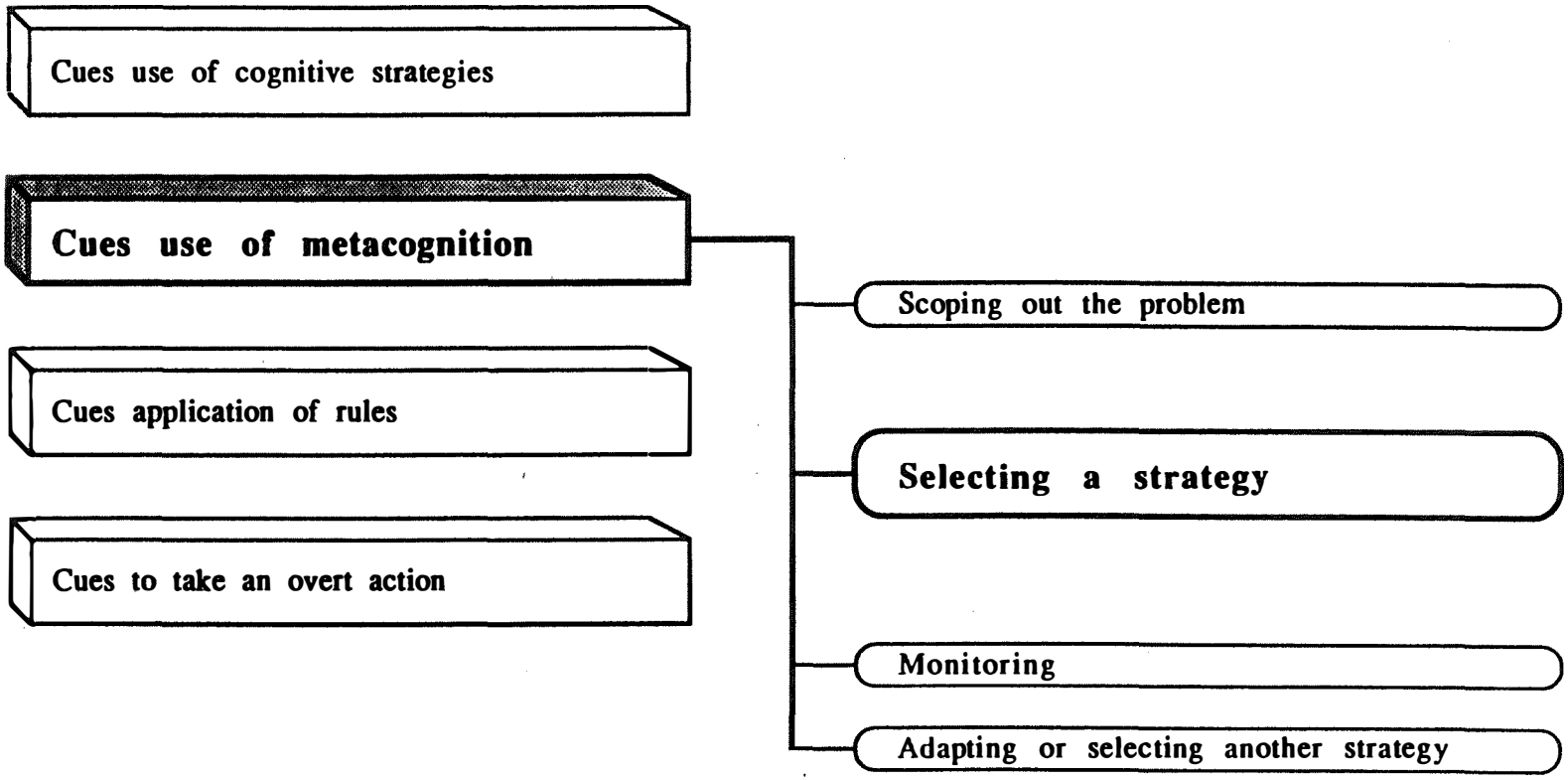

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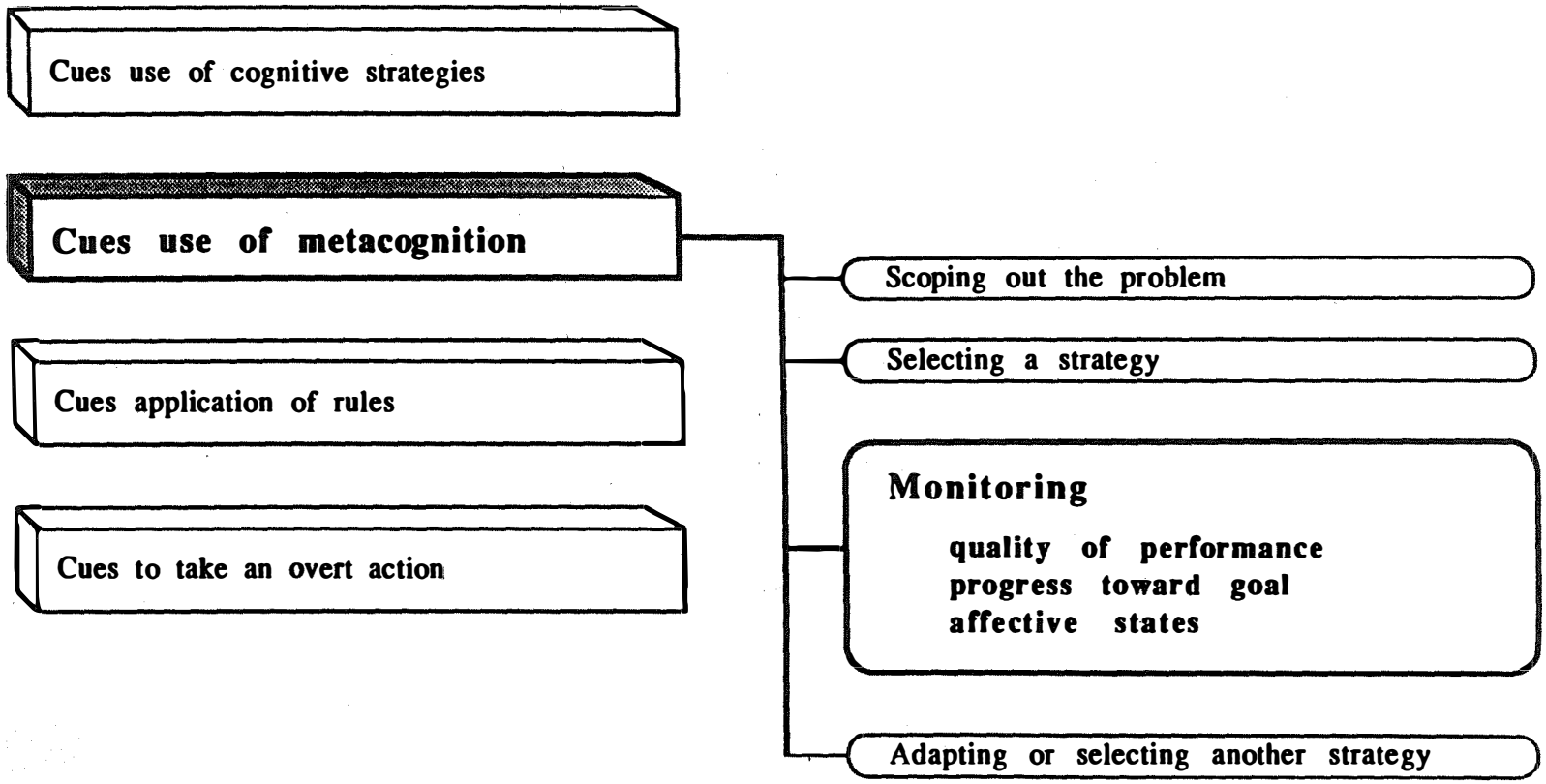

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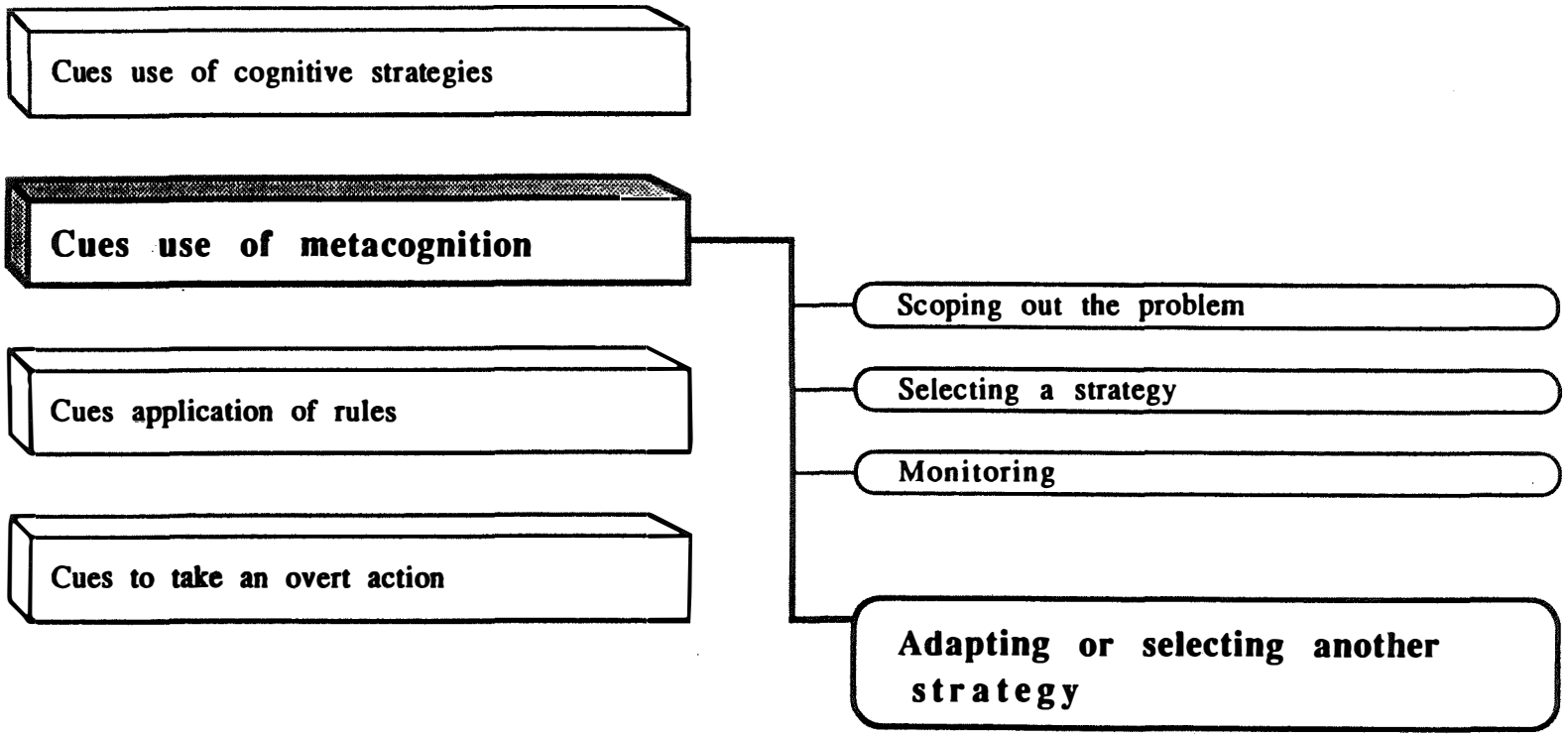

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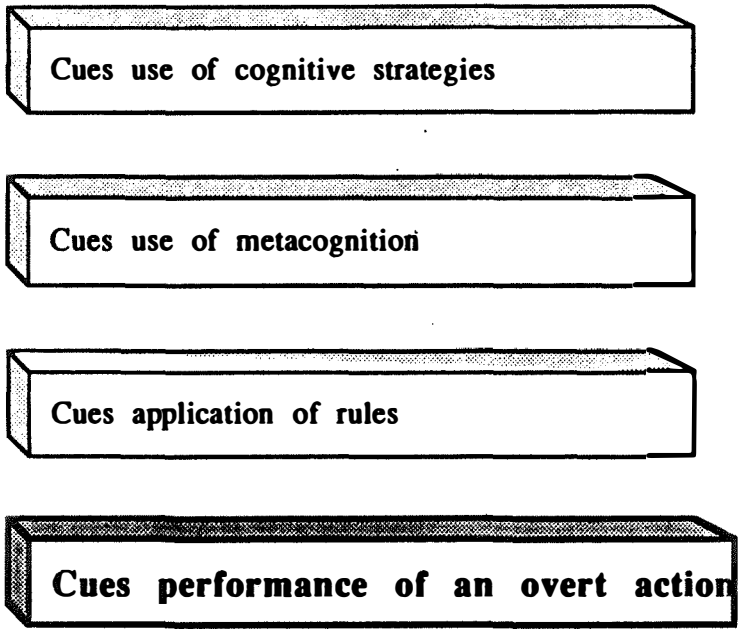
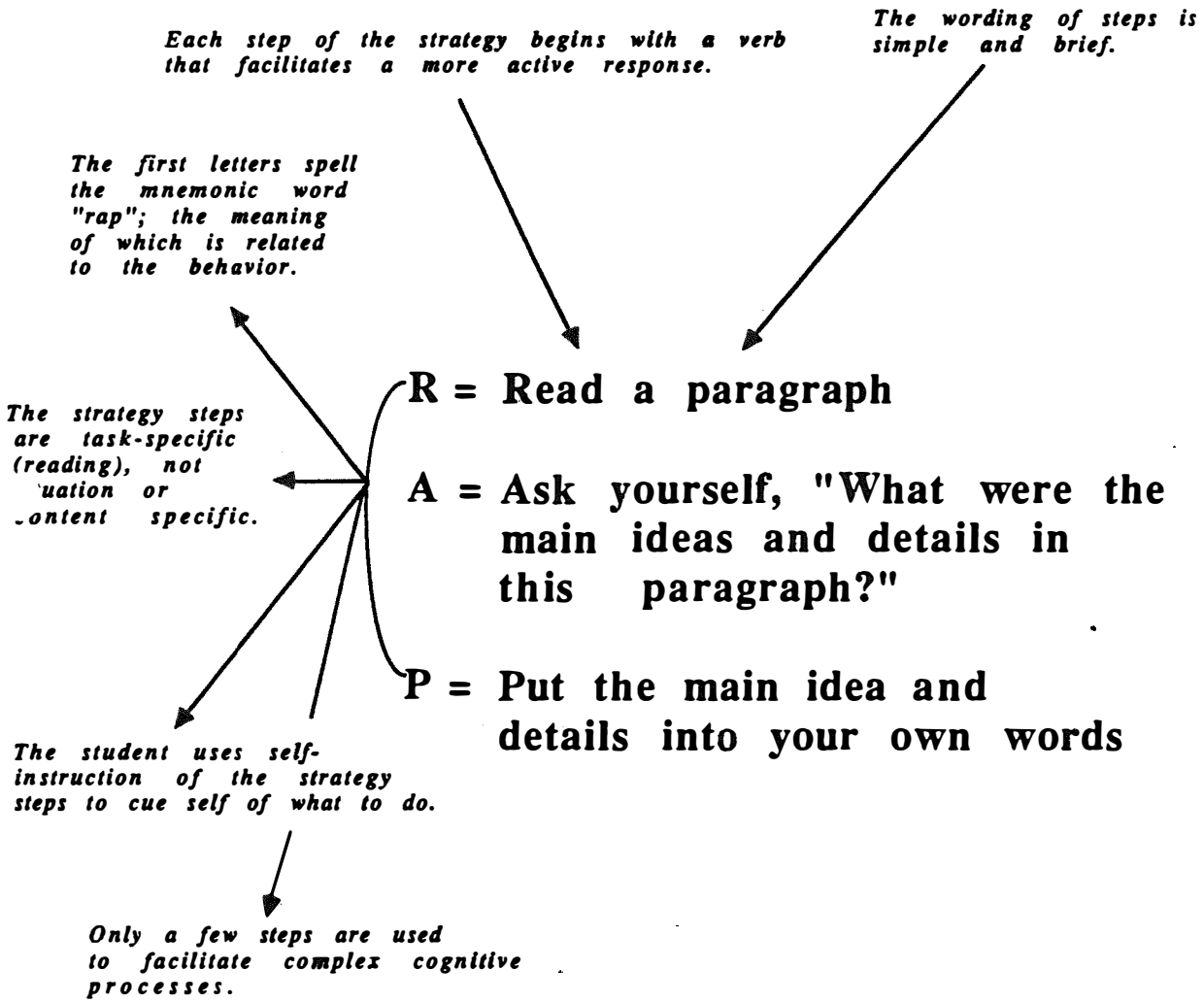


Anatomy of a Learning Strategy

Example: The Paraphrasing Strategy



Anatomy of a Learning Strategy

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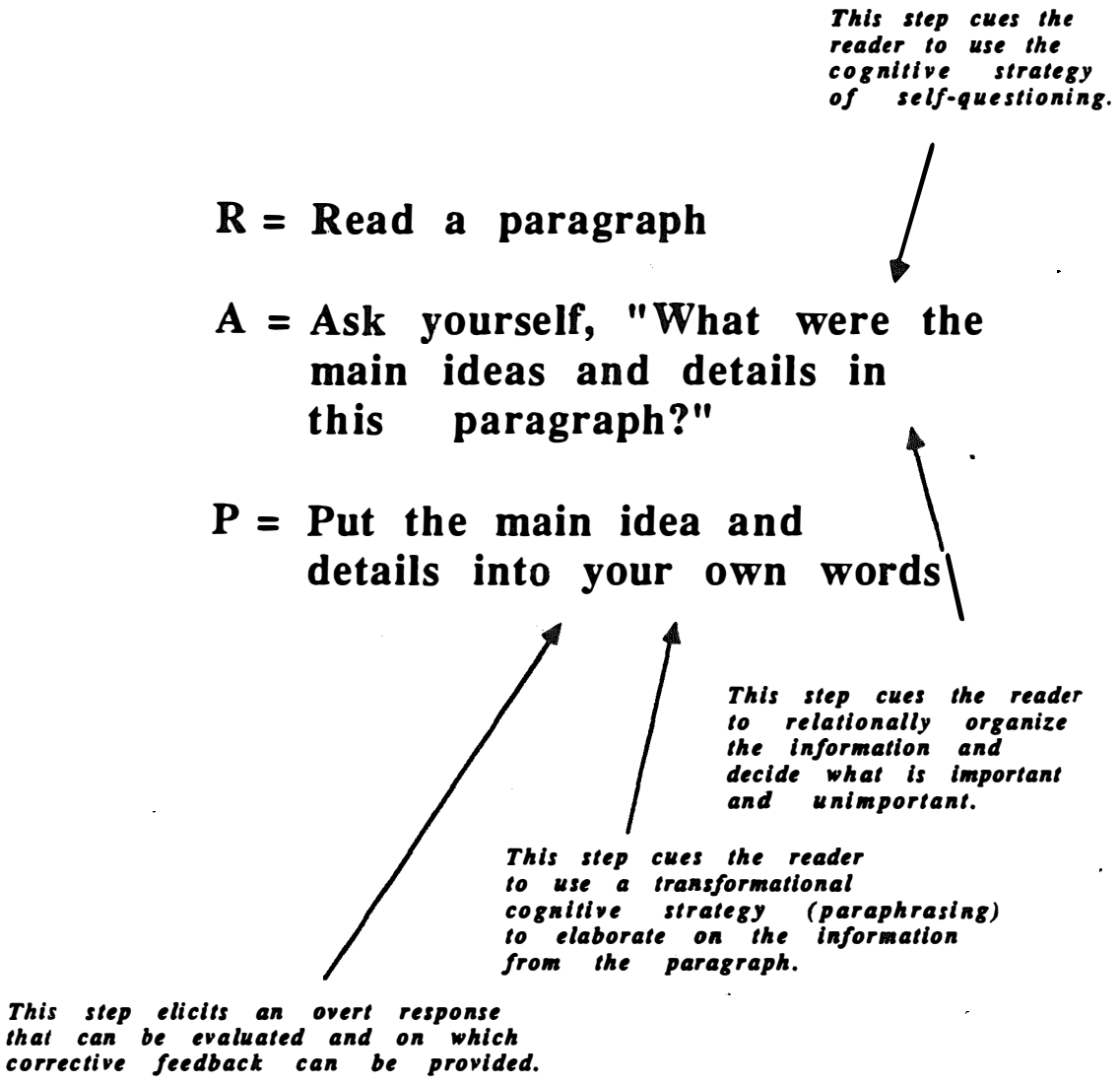

Critical Features of the Paraphrasing Strategy Intervention

	Cognitive Elements	Behavioral Elements
Design of the strategy	At least two key cognitive strategies are cued by the steps to enable the reader to elaborate, organize and translate the material: • self-questioning • paraphrasing	The steps of the strategy provide specificity for needed reading behaviors. Performance outcomes are observable. The strategy is designed to address specific setting demands.
Design of the strategy instruction	Key information related to the metacognitive domain is *(how/when/where/ why/why not, etc.)* addressed throughout. Self instructional processes are modeled. Self regulation of cognitive strategies are modeled. Self monitoring is modeled. Students verbally elaborate and memorize steps to facilitate self instruction of the steps. Feedback gradually becomes student mediated. Attribution retraining constantly occurs. Goal setting activities are an intregal component.	Students receive direct explanation in the use of the strategy. Students participate in activities that allow initially for prompted (guided) practice and gradually change to unprompted (independent) practice. Students initially receive teacher-directed feedback on specific behaviors related to correctly performing the strategy. *Paraphrases must....* • contain a complete thought • be totally accurate • have new information • make sense • contain useful information • be in the student's own words • contain only one general statement per paragraph Specific criteria for mastery are used; students are made aware of criteria. Students plot own progress on charts.

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WHAT'S SO STRATEGIC ABOUT LEARNING STRATEGIES ?

A learning strategy is a technique designed to assist a student in the mediating process of learning and completing tasks independently. It is designed to enable the student to capitalize upon and use existing skills in a strategically optimal fashion. Instruction in the learning strategy focuses on both how to learn and how to effectively use what has been learned. Several characteristics can contribute to the effectiveness of a learning strategy. A summary of these features are as follows:

FEATURES OF LEARNING STRATEGIES

* A learning strategy contain a set of steps which leads to a specific outcome.
* Each learning strategy addresses a key problem found in the students setting
* Learning strategies are task-specific
* A Learning strategy is designed to enable the student to use effective information processing problem-solving tactics
* Each step in a strategy cues the student to do something
* Learning strategy steps are characterized by brevity and simplicity
* Each step should begin with a verb or a word directly related to the task
* Learning Strategies frequently use remembering systems

LIMITATIONS OF LEARNING STRATEGIES

* Each learning strategy has entry level skill requirements
* Each learning strategy has application parameters

FEATURE 1: LEARNING STRATEGIES CONTAIN A SET OF STEPS THAT LEAD TO A SPECIFIC OUTCOME

EXAMPLE OF CONCEPT: The Paraphrasing Strategy is composed of a set of steps that significantly enhances textbook reading comprehension of those who use it appropriately.

RAP: A strategy for improving reading comprehension
R = Read a paragraph
A = Ask self what was the main idea and two details
P= Put the main idea and details into your own words

EXAMPLE OF CONCEPT: The Test-taking Strategy is composed of a set of steps that significantly enhances students ability to increase test-scores of those who use it appropriately.

PIRATES: A test-taking strategy
P = Prepare by prioritizing sections
I = Investigate instructions
R = Read for cue & hint words & Remember mnemonic devices
A = Answer or abandon questions
T = Turn back to answer hard questions
E = Estimate answers to unknown questions
S = Survey test to make sure its complete

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FEATURE 2: EACH LEARNING STRATEGY ADDRESSES A KEY PROBLEM FOUND IN THE STUDENT'S SETTING

= Academic problem-solving in school usually clusters on problems in three areas: acquisition of information, storage of information, and expression or demonstration of competence.

= Strategies that are primarily acquisition-oriented address gaining information from written or orally presented material (e.g., textbooks, technical manuals, etc.).

EXAMPLE OF CONCEPT: The Interpreting Visual Aids Strategy shows an example of an acquisition-oriented strategy. The strategy is designed to enable the student to gain information from visual aids presented in textbooks -- a common setting demand of most content-area classes.

Interpreting Visual Aids Strategy --Try Looking For Important Cues

T = 'Type' questions asked
- Picture: What's the motion or emotion?
- Chart: What's being compared?
- Graph: What are the changes over time?
- Map: What are the most important places?

L = Labels read & paraphrased

F = Focus clues (PLUNC)
- P = Print read & paraphrased
- L = Lines indicate what?
- U = Unusual features focus my attention on what?
- N = Numbers tell me what?
- C = Color being used to focus my attention on what?

I = Interpretation

C = Conclusion

EXAMPLE OF CONCEPT: Strategies that are storage-oriented address skills related to organizing, storing, and retrieving information (e.g., preparing for tests; remembering information vital to job performance). The LISTS Strategy shows a storage-oriented learning strategy for finding and organizing information to be memorized.

LIST: A strategy for finding and organizing material to be memorized

L = Look for clues

I = Investigate the items

S = Select a mnemonic device using "FIRST"
- F = Form a word
- I = Insert letters
- R = Rearrange the letters
- S = Shape a sentence
- T = Try combinations

T = Transfer information to a card

S = Self-test

EXAMPLE OF CONCEPT: Strategies that are oriented toward expressing information or demonstrating competence typically deal with taking tests, writing papers (e.g., essays, themes, term papers), or making oral presentations (e.g., speeches, reports, debates). For example, the Test Taking Strategy is used by students to demonstrate competence on tests.

PIRATES: A test-taking strategy

P = Prepare by prioritizing sections

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FEATURE 3: LEARNING STRATEGIES ARE TASK-SPECIFIC rather than situation-specific or content-specific

≈ **Task-specific** strategies are generic
In other words, they will work in a variety of content materials or situations and be relatively free of specific characteristics of a situation.

≈ **Situation-specific** strategies are designed to solve a very specific problem, and will not work on similar problems with different features.
Situation-specific strategies can be extremely effective and more powerful that the more generic task-specific strategies. However, situation-specific strategies may not be cost-effective.

EXAMPLE OF CONCEPT: PIRATES *is an example of a test-taking strategy that will work for in variety of classes; thus, it represents a task-specific or generic strategy.*

EXAMPLE OF CONCEPT: The Self-questioning Strategy (FIST) for enhancing reading comprehension will work on a variety of reading materials.

FIST: A strategy for improving reading comprehension
F = First sentence in paragraph read
I = Interrogate yourself about the sentence
S = Search for the answer to your question as you read the rest of the paragraph.
T = Tie answer to question with a paraphrase

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FEATURE 4: A LEARNING STRATEGY IS DESIGNED TO ENABLE A STUDENT TO USE EFFECTIVE COGNITIVE AND METACOGNITIVE PROBLEM-SOLVING TACTICS

- Mildly handicapped students are often characterized as having deficits in cognitive strategies, metacognition, and executive functions.---a deficit which has a major impact on their ability to meet secondary school demands.

- **Cognitive strategies** refers to the cognitive "tools" used for solving specific types of problems in a variety of situations.
Imagery is a sample cognitive strategy that students can use to help encode and recall information to be learned.

- **Metacognition** refers to one's knowledge about his/her own cognitive resources relative to a specific problem. A learner employs metacognition when assessing the aspects of a problem solving situation, picking a problem solving strategy, putting it to work, and then making sure its working effectively and adapting as needed.

> *EXAMPLE OF CONCEPT:* To be successful on typical school tasks such as reading a textbook, the LD student needs to be able to analyze the task by identifying the problem's critical attributes (e.g., *"what is it I need to learn as a result of studying this chapter?"*) as well as its cognitive demands (e.g., *"this chapter doesn't provide much in the way of visual aids to make this any easier"*), and then consider his/her own cognitive skills in relation to the task (*"let's see, I had better take this slowly and paraphrase as I go along."*).

The student must also employ cognitive processes such as monitoring the problem solving process to determine if the strategy employed is effective.

> *EXAMPLE OF CONCEPT:* The student monitor's the effectiveness of the reading strategy used to assess the reading demands of the text book (e.g., *"Paraphrasing this stuff seems to be helping, but I need to slow down even more --this stuff 's hard to understand!"*)

- Since many LD students lack these processes and skills, learning strategies are often taught to prepare the student to use these skills function efficiently in school

- The strategies are taught so that the students can cue themselves to apply the processes when tackling a task or problem.

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FEATURE 5: EACH STEP IN A STRATEGY CUES THE STUDENT TO DO SOMETHING

LEARNING STRATEGIES EMPLOY CUES TO USE COGNITIVE STRATEGIES

≈ One selects a cognitive strategy based on the perceived need

≈ Selection of strategies may depend on the efficiency of the learner
(e.g., inefficient learners may consistently employ those cognitive strategies which make minimal information processing demands, regardless of task requirements).

Many types of cognitive strategies, including:

a) rehearsal strategies
b) transformational strategies
c) organization strategies
d) mnemonic strategies
e) monitoring strategies
f) motivational strategies.

Rehearsal strategies

≈ Students use rehearsal to recite silently or orally specific information to be learned. (*e.g., verbal rehearsal*)

≈ Thus, one of the steps to a specific learning strategy might be a self-mediated cue to verbally rehearse a list of items to be memorized.

EXAMPLE OF CONCEPT: In the learning strategy CAN-DO, the "D step, "Describe each component and how they relate" cues the student to use verbal elaboration to rehearse key information to be learned; "O" step, "Overview the main parts - then supporting details", illustrates how a step in a strategy is used to cue a verbal rehearsal cognitive strategy.

CAN-DO: *a strategy for learning content information* (Ellis, Lenz, & Sabornie, 1987a)
C = Create a list of items to be learned
A = Ask self if list is complete
N = Note the main ideas from details using a tree diagram
D = Describe each component and how they relate
O = Overlearn the main parts, then supporting details

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Transformational strategies
Transformational strategies require the student to transform, embellish or elaborate information.

Paraphrasing involves information be transferred into personal language structures

EXAMPLE OF CONCEPT: The 'P' step of the Paraphrasing strategy cues the student to use paraphrasing cognitive strategies to transform information into one's own words.

RAP: A strategy for improving reading comprehension
R = Read a paragraph
A = Ask self what was the main idea and two details
P= Put the main idea and details into your own words

Imagery is used when learning new material by transforming what is to be learned into meaningful visual, auditory, or kinesthetic images of the information.

EXAMPLE OF CONCEPT: The learning strategy RIDER illustrates how visual imagery is used to facilitate reading comprehension. The "I" step, "Image", cues the student to form a picture in the mind of what has been learned from a sentence that has just been read.

RIDER: *a visual imagery strategy for reading comprehension*
(Clark, Warner, Alley, Deshler, Schumaker, Vetter, & Nolan, 1981)
R = Read a sentence
I = Image (make an image - a picture in your mind)
D = Describe how the new image is different from the last sentence
E = Evaluate (as you make the image, check to make sure it contains everything necessary)
R = Repeat (as you read the next sentence, repeat the steps to RIDE)

Self-questioning can be used as an transformational strategy or as a monitoring strategy.
As a transformational strategy, it can be used to increase reading comprehension. The student asks questions about material which is being read and then searches for the answer. Thus, the questioning strategy cues the student to actively engage the material.

EXAMPLE OF CONCEPT: The "I" step, "Interrogate yourself about the sentence" in the strategy FIST, illustrates how a student cues herself to ask questions to increase reading comprehension.

FIST: *a self-questioning strategy*
(Clark, Warner, Alley, Deshler, Schumaker, Vetter, & Nolan, 1981)

F = First sentence in paragraph read
I = Interrogate yourself about the sentence
S = Search for the answer to your question
T = Tie answer to question with a paraphrase

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Organization strategies.
≈ Involve those processes that facilitate manipulation of information so that it becomes more readily integrated and thus remembered.

≈ Students are taught to organize or to reorganize information in some manner that will make it easier to learn and remember.

≈ Like the elaboration techniques, the major advantage is that the student actively manipulates, integrates, and/or interacts with the information.

Clustering requires the student to group information into small clumps to facilitate acquisition and storage of information in memory.

Categorization requires the student to manipulate information by identifying relationships in lists of items to be learned. By rearranging the information in this manner, memory is greatly enhanced.

EXAMPLE OF CONCEPT: A learning strategy that cues the student to use categorizing cognitive strategies is the "N" step in CAN-DO. Here, the student must categorize the information in two ways: a) by topic (e.g., one branch of the tree diagram); and b) by level of importance (e.g., main idea or supporting detail represented by stem of branch or twig).

CAN-DO: *a strategy for learning content information* (Ellis, Lenz, & Sabornie, 1987a)
C = Create a list of items to be learned
A = Ask self if list is complete
N = Note the main ideas from details using a tree diagram
D = Describe each component and how they relate
O = Overlearn the main parts, then supporting details

Prioritizing is another type or cognitive strategy students need in most academic settings
One area is prioritizing time in regard to one's goals.
Another is prioritizing information to be learned.

EXAMPLE OF CONCEPT: Prioritizing is illustrated in the "O" step of the CAN-DO strategy. Here, the student instructs himself to learn all the main ideas first, and then later attend to the details. For example, while studying for a test, the student sorts out the information from that which is presented in text and lecture, but not yet understood or remembered, from that which will need little attention.

EXAMPLE OF CONCEPT: The "A" step, "Ask self which information is the least troublesome" in the strategy EASE illustrates a step which cues the student to organize and prioritize information to be learned.

EASE: *a strategy for studying content* (Ellis, Lenz, & Sabornie, 1987a)
E = Elicit "W" questions to identify important information
A = Ask self which information is least troublesome
S = Study the easy parts first, hardest parts last
E = Exalt yourself

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Mnemonic strategies.
Another type of transformational cognitive strategy involves the use of mnemonics.

Key word mnemonics method
students learn to associate unfamiliar words to be learned with words that are familiar and that may rhyme or have some physical resemblance.

EXAMPLE OF CONCEPT: The process involves:
1. Recoding the unfamiliar word into a more concrete proxy (e.g., *humiliate = humming*);

2. Relating the concrete term to the new term (e.g., *a person is humiliated because he/she was overheard humming "Dixie" during a church service*);

3. Retrieving, where the student is provided a way to retrieve all of the associated information.

First-letter mnemonics
= A common technique which requires the learner to take the first letters in each item in a list and form a word that relates to the main idea of the list.

EXAMPLE OF CONCEPT: The "S" step in LISTS, a memorization strategy cues the student to make a first-letter mnemonic device.

LIST: A strategy for finding and organizing material to be memorized
L = Look for clues
I = Investigate the items
S = Select a mnemonic device using "FIRST"
- F = Form a word
- I = Insert letters
- R = Rearrange the letters
- S = Shape a sentence
- T = Try combinations

T = Transfer information to a card
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Monitoring strategies
Cognitive tools that enable the student to monitor the progress toward one's goals.

Checking strategies enable the learner to go back and assure that a problem has been correctly solved.

Paraphrasing cognitive strategies can also facilitate self-monitoring of comprehension (*if the student cannot paraphrase some material, he/she may not understand it to begin with*).

EXAMPLE OF CONCEPT: The "A" step, cues the student to say the main idea and two details from a paragraph that was just read.

RAP: A strategy for improving reading comprehension
R = Read a paragraph
A = Ask self what was the main idea and two details
P= Put the main idea and details into your own words

Self-questioning cognitive strategies also serve as monitoring cognitive strategies (*unanswered questions serve as cues to re-examine the information*)

EXAMPLE OF CONCEPT: The "I" step, "Interrogate yourself about the sentence" in the strategy FIST

FIST: A strategy for improving reading comprehension
F = First sentence in paragraph read
I =Interrogate yourself about the sentence
S = Search for the answer to your question as you read the rest of the paragraph.
T = Tie answer to question with a paraphrase

Motivational strategies.
≈ Used in the face of a difficult, intimidating, or frustrating tasks

≈ Learning strategies may provide cues for students to make coping statements or to reinforce themselves with some type of encouraging self-statement.

≈ Self-coping statements
(e.g., *"I can handle this." ,"This is tough."*)

≈ Self-reinforcing statements
(e.g.,*"Now I'm getting it.", "This is going to be good"*).

EXAMPLE OF CONCEPT: The "E" step, "Exalt yourself" in the strategy EASE cues the student to self-reinforce following the completion of each of several sections of material to be learned

EASE: A strategy for studying content
E = Elicit "W" questions (Who, What, When, Where, Why) to identify important information
A = Ask self which information is least troublesome
S =Study the easy parts first, hardest parts last
E = Exalt yourself

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LEARNING STRATEGIES EMPLOY CUES TO USE METACOGNITION

≈ Metacognition refers to one's knowledge of one's own cognitive resources as well as the factors that affect effective problem solving.

≈ Metacognition is used to:

1. Scope out a problem to determine its critical attributes
   (e.g. *identifying the task demands, identifying personal characteristics that enhance or interfere with the problem solving process*),
2. Select appropriate cognitive strategies to solve the problem
3. Monitor the effectiveness of the problem solving process
4. Adapt accordingly.

≈ Metacognitive strategies can be defined as those cognitive activities that act on this knowledge to enhance the problem solving process. Effective learning strategies cue or remind the student of this process.

Executive or control processes

≈ Executive statements may direct the student to take a specific action as part of the problem solving procedure.

≈ Some strategies contain a step that cues the student to use an executive process to determine the next step in a problem solving process.

≈ Monitoring is one of the most frequent metacognitive processes cued by learning strategies.

≈ The metacognitive strategy is application of the mental cue to evaluate, where as the cognitive strategy is the actual technique used to perform the evaluation.

Self monitoring of the quality of one's performance

Almost every task in the academic setting requires some form of monitoring, so cues to monitor the quality of a product are often inserted into specific learning strategies.

EXAMPLE OF CONCEPT: The "R" step, "Read for meaning", in the Error Monitoring Strategy illustrates a cue to monitor performance.

WRITER: a strategy for monitoring written errors

W = Write a rough draft
R = Read for meaning
I = Interrogate yourself using the COPS questions
- C = Have I *capitalized* the first letter in each sentence and all proper nouns?
- O = Are there any *overall appearance* errors?
- P = Is each sentence *punctuated* correctly?
- S = Are all the words *spelled* right?

T = Take the paper to someone for help
E = Execute a final copy
R = Reread as a final check

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Self-monitoring of one's progress.
Learning strategies often contain a step which cues the student to evaluate his/her progress in relation to the goal.

A common application of a metacognitive strategy which focuses on self-monitoring of one's progress is the use of self-questioning to evaluate reading comprehension . Here, the student questions herself about whether or not comprehension is occurring. e.g....
"Does this make sense, or should I read this part again?"
"Am I getting the main idea?",
"Am I learning what I need to learn?"

EXAMPLE OF CONCEPT: In the CAN-DO strategy, one of the activities is to form a complete list of material to be learned. The "A" step of this strategy, "Ask self if the list is complete", illustrates how a step can cue self-monitoring of one's progress toward collecting information to be learned.

CAN-DO: A strategy for organizing and learning content-subject matter
C = Create a list of items to be learned
A = Ask self if list is complete
N = Note the main ideas from details using a tree diagram
D = Describe each component and how they relate
O = Overlearn the main parts, then supporting details

Self-monitoring of affective states.
≈ Since many mildly handicapped students do not appear to have effective tactics to help them initiate and stick with difficult and frustrating tasks, cues to monitor affective states are often embedded within a learning strategy.

≈ Once alerted, the LD student can then select a motivational cognitive strategy.

LEARNING STRATEGIES EMPLOY CUES TO APPLY RULES

≈ Many mildly handicapped students have knowledge of basic academic rules, but fail to apply them effectively.

≈ Some steps to a learning strategy simply cue the student to apply a known rule.

EXAMPLE OF CONCEPT: The "E" step of the Word Identification Strategy, "Examine the stem using the rules of 2s & 3s" illustrates how a specific step can cue the use of rules.

DISSECT: a word identification strategy
D = Discover the context
I = Isolate the prefix
S = Separate the suffix
S = Say the stem
E = Examine the stem using the rules of 2s and 3s
(If a stem or part of the stem begins with a vowel, divide off the first two letters; if it begins with a consonant, divide off the first three letters)
C = Check with someone
T = Try the dictionary

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LEARNING STRATEGIES EMPLOY CUES TO TAKE OVERT ACTION

= Some steps simply cue the student to take a specific overt action that is necessary to complete a task.

EXAMPLE OF CONCEPT: The Error Monitoring Strategy, WRITER contains several steps ("W", "T", & "E") designed to cue the student to complete an overt behavior.

WRITER: a strategy for monitoring written errors

W = Write a rough draft
R = Read for meaning
I = Interrogate yourself using the COPS questions
  C = Have I *capitalized* the first letter in each sentence and all proper nouns?
  O = Are there any *overall appearance* errors?
  P = Is each sentence *punctuated* correctly?
  S = Are all the words *spelled* right?
T = Take the paper to someone for help
E = Execute a final copy
R = Reread as a final check

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FEATURE 6: LEARNING STRATEGY STEPS ARE CHARACTERIZED BY BREVITY AND SIMPLICITY

≈ Learning strategies are designed to be as brief as possible while maintaining the integrity of the plan.

≈ The steps of an effective learning strategy are as short as possible to accommodate the student's memory capacity.

≈ More than seven steps is generally unacceptable to the students.

EXAMPLE OF CONCEPT: Some strategies involve numerous complex processes which cannot be reduced to seven steps. In these cases, the strategy is often broken down into a series of "mini-strategies". The Text-book Reading Strategy "Multipass" illustrates this concept.

Multipass: a textbook reading strategy

Survey the chapter using TISOPT
T = Title read and paraphrased
I = Introduction read verbatim and paraphrased
S = Summary read verbatim and paraphrased
O = Organization analyzed by reading headings
P = Pictures examined
T = Table of contents examined

Size Up the information in the chapter using IQ-WHO
I = Illustrations interpreted
Q = Questions at the end of the chapter read & paraphrased
W = Words in italics defined
H = Headings for each do -----> RASPN
- R = Read a heading
- A = Ask self a question based on heading topic
- S = Scan for the answer
- P = Put answer in own words
- N = Note important information

O = Other cues that textbook employs are identified & used

Sort Out what has been learned from what needs to be learned using RAMS
R = Read the question
A = Answer the question if known
M = Mark the question to indicate status
S = SEARCH for the answer
- S = Select a single heading
- E = Examine the content carefully
- A = Answer question if possible
- R = Repeat under another heading if needed
- C = Check with someone if still not found
- H = Hassle questions clarified with teacher

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≈ Minimizing the number of words in a step, even though the actual complexity of the step is much greater, is effective.

EXAMPLE OF CONCEPT: The FIST Strategy illustrates how only a few words are used for each step, but the cognitive activity which is cued is considerable.

FIST: A strategy for improving reading comprehension
F = First sentence in paragraph read
I = Interrogate yourself about the sentence
S = Search for the answer to your question as you read the rest of the paragraph.
T = Tie answer to question with a paraphrase

≈ The few words contained in each step are heavily "loaded" with meaning.

FEATURE 7: EACH STRATEGY STEP BEGINS WITH A VERB OR A WORD DIRECTLY RELATED TO THE ACTIVITY

≈ Each step should begin with a verb or word directly related to the action the steps is designed to cue.

≈ Steps that do not begin with verbs usually begin with words that directly relate to the activity involved in the step.

FEATURE 8: LEARNING STRATEGIES FREQUENTLY INCORPORATE REMEMBERING SYSTEMS

≈ Many of the learning strategies are encapsulated using acronyms.

≈ Each letter represents a specific step in the strategy.

≈ The acronyms act as mnemonic devices; the meaning of the word spelled by the acronym specifically relates to the task.

EXAMPLE OF CONCEPT: The names of the strategies below illustrates how the mnemonic names of strategies relate to the purpose of the tasks.

WRITER	A strategy for monitoring written errors
LISTS	A strategy in which first-letter mnemonics are used to memorize several lists of items
DISSECT	A strategy for dissecting words into individual syllables for word identification
RAP	A strategy in which students "rap" with themselves by paraphrasing content
SEARCH	A strategy for searching for the answer for study-guide questions

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LIMITATIONS OF LEARNING STRATEGIES

LIMITATION 1: EACH LEARNING STRATEGY HAS ENTRY LEVEL SKILL REQUIREMENTS

EXAMPLE OF CONCEPT: The Word Identification Strategy relies heavily on a procedure for syllabicating words, so the student can apply phonic skills to decipher long multisyllabic words. To successfully apply the strategy, the student must have a working knowledge of phonics.

EXAMPLE OF CONCEPT: Multipass, a strategy for reading textbooks has entry level skills that are much more advanced. The student must be able to paraphrase, interpret visual aides, use self-questioning reading strategies, and scan prose before it is appropriate to teach her/him this strategy.

LIMITATION 2: EACH LEARNING STRATEGY HAS APPLICATION PARAMETERS

Parameters defined by skill deficits.

≈ The first parameter concerns those skill or knowledge deficits a student may be experiencing with a given task that a learning strategy will not help overcome.
e.g., prerequisite skills necessary for effective strategy application

EXAMPLE OF CONCEPT: A student who has not mastered the basic skills associated with identification of subjects and predicates will experience more difficulty learning The Sentence Writing Strategy and less success using it than a student who already possess these key perquisite skills.

Parameters defined by performance domain.

≈ When a strategy is designed to address a specific domain of academic performance, but the strategy does not encompass all the factors within that domain; in other words, to meet a specific set of setting demands, a student may require instruction in strategic behaviors that are not included in the learning strategy intervention designed to target these setting demands.

EXAMPLE OF CONCEPT: A theme writing strategy which focuses on organization and presentation of ideas may be of little benefit when the student's major writing problem is grammar;

EXAMPLE OF CONCEPT: The Word Identification Strategy is designed to enable students to recognize printed words that are in their listening vocabulary; the use of this particular strategy is limited to the depth of a given student's listening vocabulary. The parameters of this strategy will be broader for those students who have more extensive listening vocabularies than for those whose listening vocabularies are limited.

Parameters defined by environmental stimulus.

≈ The degree of mismatch between what a strategy is designed to do and the situation (environmental stimulus) in which the strategy is applied.

EXAMPLE OF CONCEPT: The Interpreting Visual Aids Strategy has limited application when reading material in which visual aids are not designed to supplement, clarify or elaborate text content;

EXAMPLE OF CONCEPT: Some textbooks do not lend themselves to using "Multipass", (the Textbook Reading Strategy) because the book may employ little in the way of study aids (questions, organizers, italized words) that are cued to be attended to by the steps of the strategy. These two scenarios reflect situations in which the task stimulus is simply different from the types of stimulus the strategy is designed to target.

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Parameters defined by miss-match between the complexity of the stimulus and the power of the strategy to mediate effective learner interaction with the stimulus.

= The complexity of the content to be learned does not readily lend itself to a strategy that was designed to address less complex material.

EXAMPLE OF CONCEPT: The effectiveness of the Paraphrasing Strategy will be considerably diminished if the student is reading material which contains many complex, novel concepts.

EXAMPLE OF CONCEPT: The mnenomics strategy LISTS may provide only limited help when the information to be learned is so complex that it does not lend itself to list generating and memorizing techniques.

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SUMMARY

≈ A learning strategy is an integrated system that assists a student in solving an academic problem
efficiently and effectively.

≈ An effective strategy is designed to enable students to use *self-instruction* to cue various covert and overt processes to solve similar, frequently occurring problems in a variety of situations;

≈ Cues for using cognitive and metacognitive techniques, applying rules, or taking overt actions are often embedded in the learning strategy steps.

≈ In addition, the steps of the strategy are, in reality, the steps of a validated problem solving process applied to a common academic problem.

≈ The presentation of the learning strategy must be characterized by simplicity and brevity, attention to memorization demands, limitations of application, and structured instructional steps.

≈ The characteristics of the learner, the nature of the problem and the design of the strategy define the parameters of a strategy's effectiveness.

TACTIC: Developing A Learning Strategy
PART 2

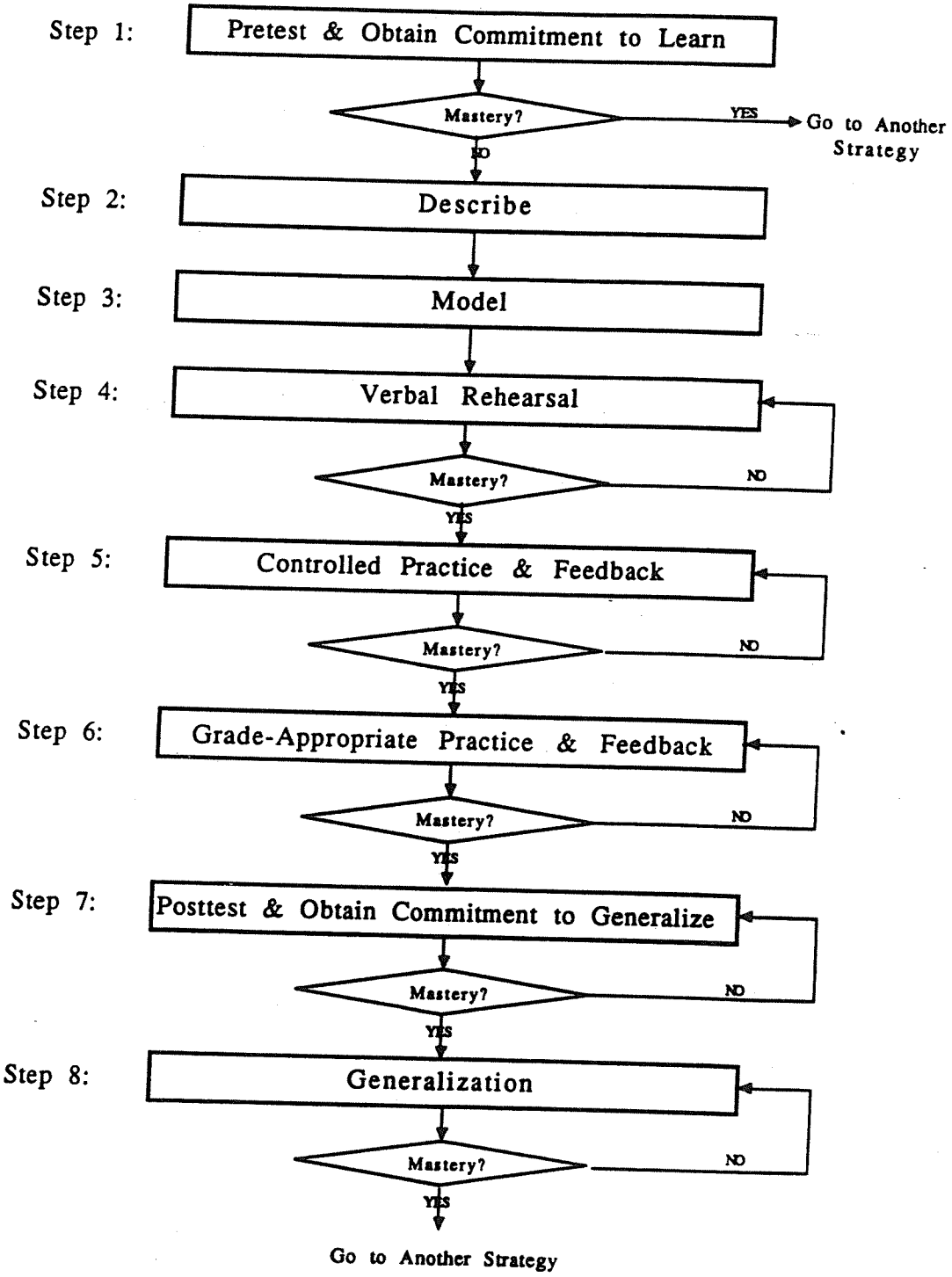
What's So Strategic About Strategies Instruction?

The Strategic Instruction Model

The University of Kansas
Center for Research on Learning

This overview material is based on the book TACTIC: Developing A Strategy Intervention by Edwin S. Ellis, B. Keith Lenz, & Frances L. Clark and will be published by EXCELLENTerprises, Inc. Some of the information is presented in an unedited form and is excerpted from a draft manuscript. Therefore, this information is for personal and privileged use in preparing presentations related to strategy interventions and is not for duplication, dissemination or citation.

The Steps of Strategy Acquisition and Generalization



Part 3: The Tactic Procedure

TACTIC:

Developing Strategy Interventions

Edwin S. Ellis
The University of South Carolina

B. Keith Lenz
The University of Kansas

Frances L. Clark
The University of Kansas

January 30, 1989

Target a setting demand
Arrive at strategy steps
Create a remembering system
Translate for learning
Investigate the strategy
Construct instructional plan

TACTIC

DEVELOPING STRATEGY INTERVENTIONS

Stages of Development

T arget a setting demand

A rrive at strategy steps

C reate a remembering system

T ranslate for learning

I nvestigate the strategy

C onstruct instructional plan

TACTIC
DEVELOPING STRATEGY INTERVENTIONS

STAGE 1

TARGET A SETTING DEMAND

1. Target a group of students
2. Identify the critical success settings
3. List the demands for the first setting.
4. List the demands for the second setting
5. List the demands for the remaining settings
6. Target a general setting demand
7. Analyze the demand
8. Target a a specific setting demand
9. Specify the strategy development goal

T = Target setting demands

NAME: _____

SETTINGS:	DEMANDS:	LEARN HOW TO:	✓

STRATEGY DEVELOPMENT GOAL SPECIFICATION

T = Target setting demands

NAME: Keith & Fran

4th grade: Mark, Johnathan, Dan, Shane, Greg, Josh

SETTINGS:	DEMANDS:	LEARN HOW TO:	✓
1. Social Studies	1. (Read text) ✓✓	Survey Chapter	✓✓
2. Earth Science	1. Take notes ✓✓	(Get information from illustrations)	✓✓ ✓✓
3. Home Room	1. Write reports ✓	check comprehension	✓✓
4. Music	1. Take tests ✓✓	use text cues	✓✓
5 ~~Sports Events~~	1. Take vocabulary quizzes ✓	take notes	✓
	2. Do chap questions as homework ✓✓	answer questions in text	✓
	2. Do projects ✓✓	summarize	✓
	2. Complete assignments in class ✓	identify main idea and details	✓
	2. Participate in large group discussions ✓	identify cause and effect	
	2. small group cooperation ✓	draw conclusions	

STRATEGY DEVELOPMENT GOAL SPECIFICATION

In order for students to meet the general setting demand of getting information from text, a strategy will be developed that will teach students how to obtain information from visuals.

TACTIC
DEVELOPING STRATEGY INTERVENTIONS

STAGE 2

ARRIVE AT STRATEGY STEPS

1. Engage in situational imagining
2. Evaluate the situational imagining
3. Define the overt procedure
4. Define the covert operations
5. Identify prerequisites
6. Review and finalize

Situational Imagining

I am reading in my book on earth science....

....I see the reference to "water cycle" and see "Figure 2" I don't remember anything about this, I am not sure what it really is...I decide I need to know more about water cycle.... the visual will give me more information....

...I look at Figure 2 - I see the title "water cycle" - I read the caption and I know now that water cycle includes the words "evaporates" and "condenses"..the caption says that water evaporates into the air and that it condenses to form clouds...Hmm... water turns into clouds....it also says that the water returns to the earth in the form of rain... I guess from the clouds....

....what does the visual show?..I need to read the labels and look at the picture...

In the visual...I see that the the land is shaded and that the ocean and water are not shaded...Let me see... the clouds in sky show that it is raining or snowing....okay...so what is the "water cycle".... I am not sure so I need to look some more.....

...okay.... there are arrows....I see arrows from rain going to the clouds - what does this mean?....there are also arrows coming from the lakes, soil, the ocean ... I know...it must mean that water form the earth can form clouds...but how? ....it seems that the water turns to water vapor first then it turns into clouds?...

....So earth water turns to water vapor which forms clouds - and I see water comes form clouds in the form of rain and snow and it starts over again - this must be the cycle...the water cycle let me read caption again - yes ..that fits - yes, water from rivers or lakes evaporates, which means it forms water vapor, and the water vapor forms clouds and the clouds return the water to the earth in the form of rain or snow or sleet and this water forms the rivers and lakes and it starts all over again.... So how does this fit into the chapter?...what is chapter about? Oceanography ...the study of ocean

...The ocean must play a role in the water cycle - there is an ocean in the picture - yes, it is part of cycle - OK - what do I need to remember from this visual - I need to remember that the water cycle is the process of earth water turning into water vapor - this is evaporation - which makes clouds - which returns water to earth as snow or rain....the ocean is a major source of water and must be a major part of the water cycle...

...Great!...now...let me go back to what I was reading - I need to start back at the beginning of the paragraph so I can put this information in - yes - it makes sense I understand and can "see" the water cycle - I know this - I can go on...

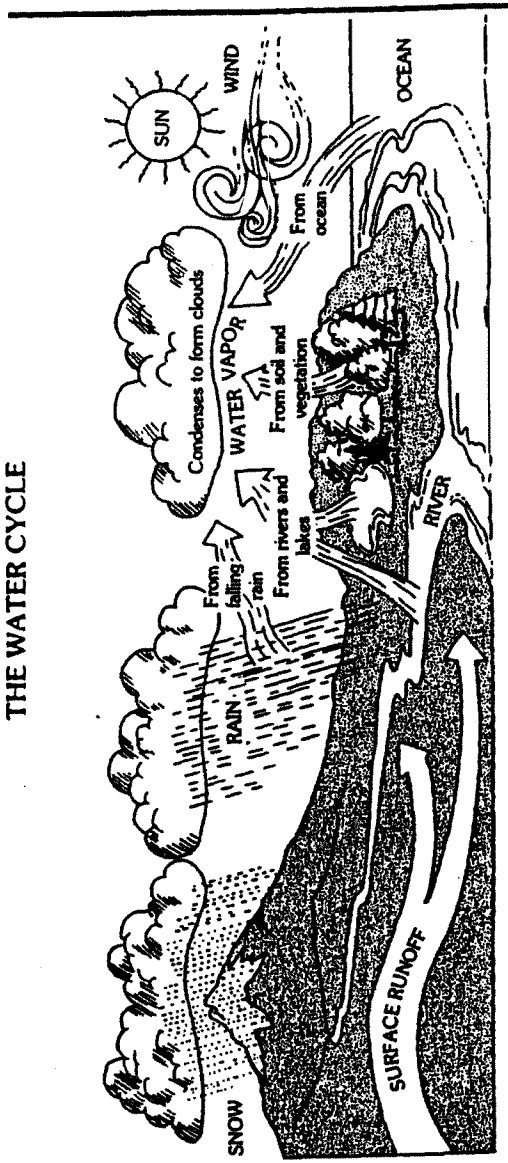


FIGURE 2: Water from lakes, plants and oceans evaporates into the air and condenses to form clouds. Eventually the water returns to the earth in the form of sleet, hail, snow or rain.

MODEL VISUAL AID: DIAGRAM #7 — FLOWCHART

A = Arrive at strategy steps

PROCEDURES (What you do...)	**INSIGHTS/EXPLANATIONS/DECISIONS** (What goes on in your head...)

STRATEGY DEVELOPMENT WORKSHEET #2

A = Arrive at strategy steps

PROCEDURES (What you do...)	INSIGHTS/EXPLANATIONS/DECISIONS (What goes on in your head...)
1 Read the text	
2. Watch for references to visuals	
3. Find visual	
4. Examine visual	
5. Put information in notes	
6. Continue reading	

PHYSICAL REGIONS OF THE UNITED STATES

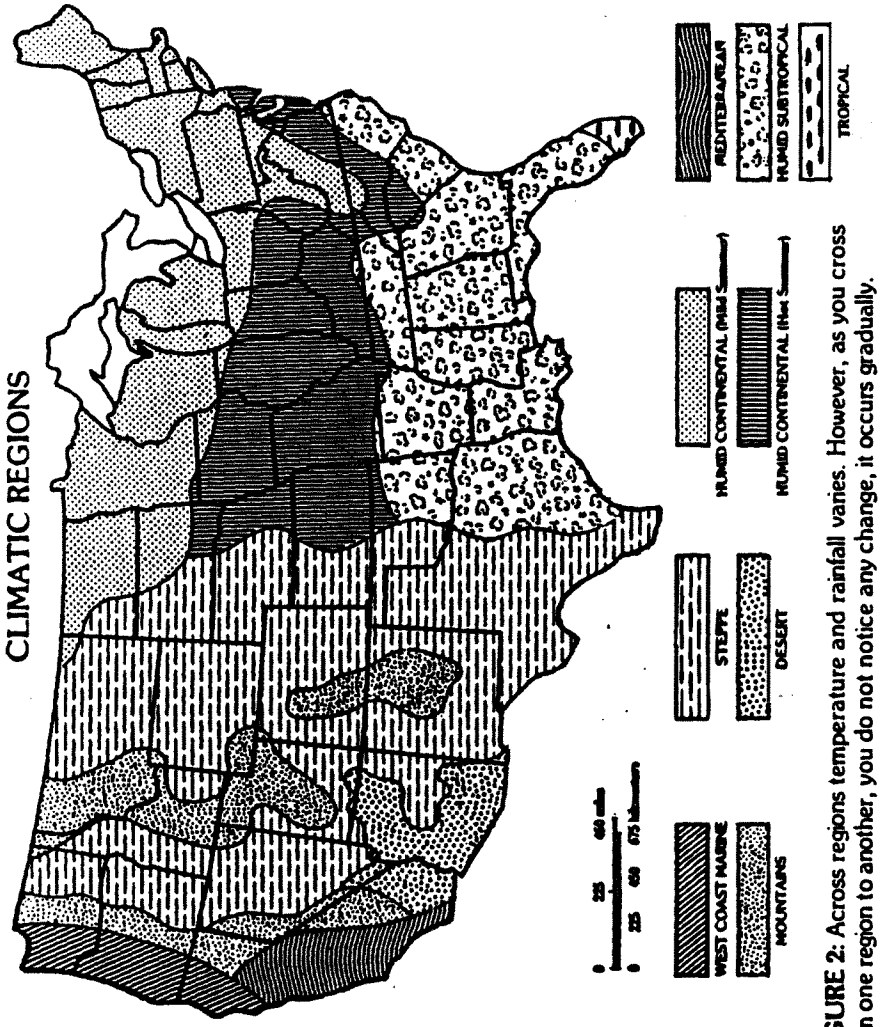


FIGURE 2: Across regions temperature and rainfall varies. However, as you cross from one region to another, you do not notice any change, it occurs gradually.

MODEL VISUAL AID: MAP #1 — DISTRIBUTION

CHAPTER 10

SOURCES OF ENERGY

MODERN ENERGY USE

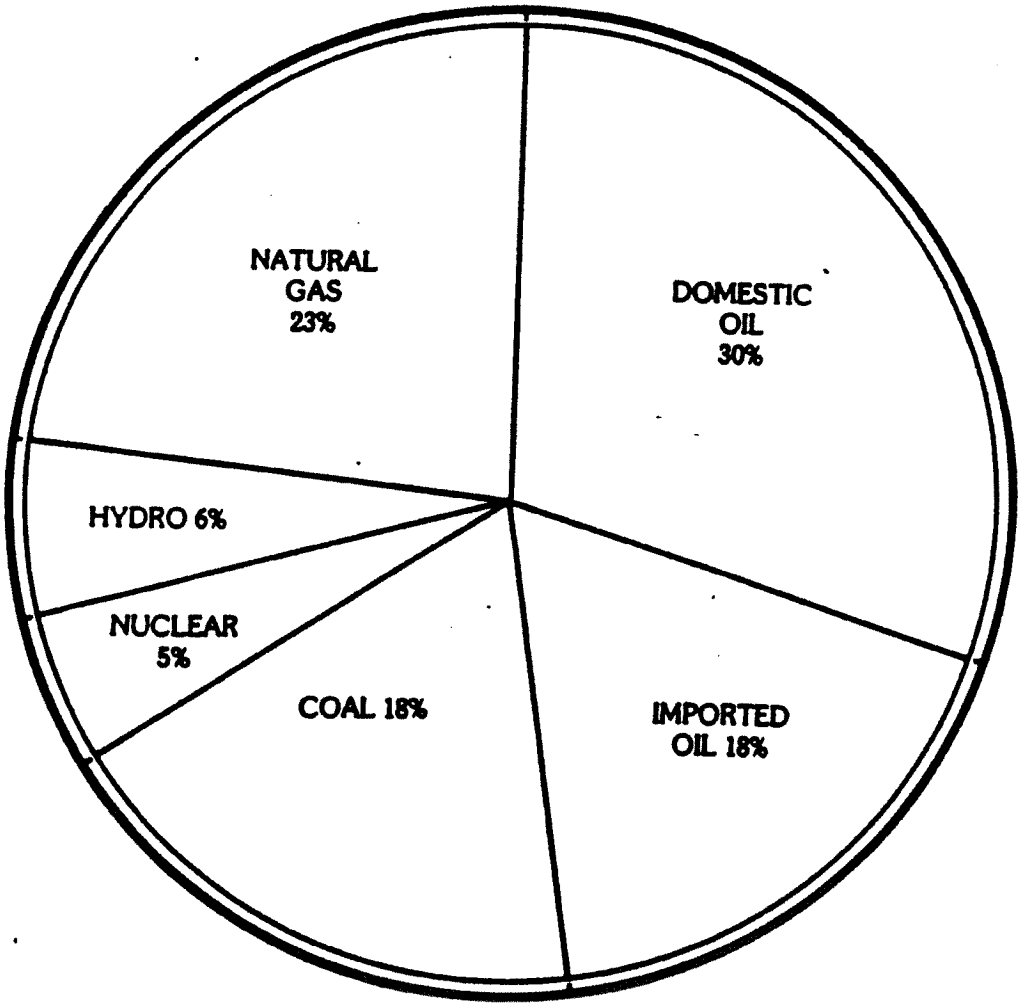


FIGURE 2: In 1985 only 5 percent of all energy use in the continental United States came from Nuclear Energy.

MODEL VISUAL AID: DIAGRAM #2 — CIRCLE GRAPH

STAGE 3

CREATE A REMEMBERING SYSTEM

1. Organize worksheets
2. Reformulate key action statements
3. Reduce the number of steps
4. Identify the key action words
5. Reword the steps
6. Develop the remembering system
7. Reformulate the covert operation statements
8. Link the remembering system to the strategy
9. Play with the remembering system

C = Create a remembering system

REMEMBERING SYSTEM

MEMORY DEVICE	INTENDED ASSOCIATIONS (What each step cues the student to do . . .)

Link Device To Strategy

C = Create a remembering system

REMEMBERING SYSTEM

MEMORY DEVICE	INTENDED ASSOCIATIONS (What each step cues the student to do . . .)
Attend to illustrations	1. As you read watch for cues related to visuals 2. When you see a visual, ask yourself if the visual will help you understand, organize or remember the key information, if "yes" - go on to the next strategy step, if "no" - continue reading
Check for CLUES Captions Lines Unusual Explanations Shading	3. Look for CLUES in the visual that will help you interpret it. 4. Read the Captions and labels to see what the visual is about and try to put the words and visuals together 5. See if lines have been used to divide or organize information 6. Look for Unusual features such as arrows, insets, or exaggerations of parts of the visual 7. Use Explanations of the visual that are provided by Keys, a compass, or a scale 8. See if shading has been used to focus attention and show importance
Target relationships and take action	9. Using all the information from CLUES, decide what is the main idea of the visual 10. Identify the details that support the main idea - be able to give examples 11. Decide how the information from the visual relates to the section and the rest of the topic 12. Put the information in your notes or take action on the information 13. Go back to reading the text and continue to Attend to Illustrations

Link Device To Strategy

1. One way to get into the "ACT" as you read is to inspect the visuals
2. Each "ACT" of a play reveals more about the story - you can gain more information as you read if you "ACT" on the visuals.

TACTIC
DEVELOPING STRATEGY INTERVENTIONS

STAGE 4

TRANSLATE FOR LEARNING

PART I: The strategy's when, where, and why

1. Construct a definition
2. Construct rationales
3. Specify general situation characteristics

PART II: Student progress and mastery evaluation system

4. Develop an evaluation system
   a. Build an effectiveness measure
   b. Build an efficiency measure

T = Translate for learning

CHARACTERISITICS OF SITUATIONS

YOU SHOULD USE THIS STRATEGY WHENEVER:

EXAMPLES	NON-EXAMPLES

EVALUATION SYSTEM

PROCESS	PRODUCT

T = Translate for learning

CHARACTERISITICS OF SITUATIONS

YOU SHOULD USE THIS STRATEGY WHENEVER:

1. you see the cue words "See Figure", "see the map", "Look at..."; "the graph on page..."
2. When information is presented visually (chalkboard, overhead projector)
3. Whenever you read something with visuals (text, newspaper, magazine)
4. Following directions with illustrations
5. Following directions to make something work

EXAMPLES

Vocational manual with visuals

NON-EXAMPLES

Lecture with no visuals

EVALUATION SYSTEM

PROCESS	PRODUCT
	1. Given topics based on visual, explains topic including at least one main idea and 2 details 2. Reconstructs visuals and explains 3. Answers comprehension questions over visuals 90% accuracy

TACTIC
DEVELOPING STRATEGY INTERVENTIONS

STAGE 5

INVESTIGATE THE STRATEGY

1. Evaluate the usefulness of the strategy
2. Evaluate strategy content features
3. Evaluate strategy design features
4. Evaluate strategy evaluation features
5. Modify the strategy

Strategy Evaluation Checklist

Answer each evaluation question by checking the "yes' or "no" box. A check in the "yes" box (cued by the solid line) will indicate that the feature or features addressed by the question are appropriately included in the strategy. A check in the "no" box (cued by a dotted line) will indicate that a potential problem exists related to the feature or features addressed by this question. If you make a check in a "no" box, make a note in the comments column that explains your check.

1. Evaluate Strategy Usefulness.

Comments

no	yes	a. Does the strategy address a key problem that is found in settings that the student must currently face?
no	yes	b. Will the student be required to frequently apply the strategy to meet the setting demand?
no	yes	c. Can the strategy be generalized across a variety of settings, situations, and contexts?
no	yes	d. Will the student be required to face similar demands in the future where frequent application of the strategy might be necessary?

2. Evaluate Strategy Content Features.

Comments

no	yes	a. Does the strategy contain a set of steps that lead to a specific and successful outcome?
no	yes	b. Are the steps of the strategy sequenced in a manner that leads to an efficient approach to the task?
no	yes	c. Do the steps of the strategy cue the student to use specific cognitive strategies?
no	yes	d. Do the steps of the strategy cue the student to use metacognition?
no	yes	e. Do the steps of the strategy cue the student to select and use appropriate procedures, skills, or rules?
no	yes	f. Do the steps of the strategy cue the student to take some type of overt/physical action?
no	yes	g. Are all overt/physical actions supported by a clear explanation of the associated mental actions that can take place?
no	yes	h. Can all the steps of the strategy be performed in a limited amount of time?
no	yes	i. Are there any unnecessary steps or explanations in the strategy?
no	yes	j. Does the strategy contain information related to why, when, and where to use the strategy.
no	yes	k. In general, does the strategy include guidelines related to how to think and act when planning, executing, and evaluating performance on a task and its outcomes?

3. Evaluate Strategy Design Features.

Comments

no yes	a. Are entry level skills clearly specified or taken into consideration as part of the steps of the strategy?
no yes	b. Has a remembering system been incorporated into the intervention to facilitate memorization of the strategy steps and explanations?
no yes	c. Is each step of the remembering system short?
no yes	d. Does each step of the remembering system begin with a verb or a key word directly related to the mental or physical action that the step is designed to cue.
no yes	e. Are there seven or less key steps in the remembering system for the strategy.
no yes	f. Does the remembering system relate to the overall process that the strategy is designed to address.
no yes	g. Are the language and vocabulary used to convey the strategy steps and explanations uncomplicated and familiar.
no yes	h. Will the measurement system provide ongoing information that will demonstrate to the student and the teacher that the demands of the setting are being met?
no yes	i. Will the measurement system provide ongoing information to the student and the teacher related to how the strategy is being learned and used?

General Comments

Ellis, Lenz, & Clark, 1988

TACTIC
DEVELOPING STRATEGY INTERVENTIONS

STAGE 6

CONSTRUCT INSTRUCTIONAL PLAN

DESIGN INSTRUCTION FOR THE STAGES OF STRATEGY AQUISITION AND GENERALIZATION:

1. **Pretest**
2. **Describe**
3. **Model**
4. **Rehearsal**
5. **Controlled practice**
6. **Advanced practice**
7. **Posttest**
8. **Generalization**
   a. **orientation**
   b. **activation**
   c. **maintenance**

STAGE 1: Pretest

What your GOALS are:

To determine whether students need instruction in the strategy for .....

To determine how students will likely respond to the strategy instruction.

The teacher will need	**Students will need**	**TIME required**
Evaluation Guidelines, Score sheets, Progress Charts,		

1. Provide an advance organizer:

- **What:**

- **Why:**

2. Instructions for Pretest Task

- **For the teacher:**

- **For the student:**

What to require for MASTERY:

STAGE 2: Describe (Phase 1- describe rationale for learning the strategy)

What your GOALS are:
1. To make students aware of the need to learn the strategy & where and when it can be used
2. To make students aware of what the strategy is designed to do & how it works
3. To obtain a commitment to learn the strategy & set goals for rate of learning

The teacher will need	Students will need	TIME usually required
Transparencies of Cue Cards, Progress Charts, Management Charts Calendar	Each student will need folders containing Cue Cards and a Progress Chart	

1. Provide an advance organizer:

- **What:**
  "We will be beginning a new unit on learning a strategy you will use to help you .....

  Most students master this strategy in _____ weeks".
- **Why:**

- **How:**
  "We will be learning about where the strategy can be used, what is involved in learning it, & how the strategy works. We will also be setting some goals for learning the strategy."

2. Briefly review the steps of the strategy.

3. Discuss results other students have experienced.

Before learning the strategy After learning the strategy

4. Provide rationale for using the strategy.

- **Benefits in school:**

- **Benefits in employment:**

- **Benefits in community life:**

5. Identify real assignments in specific classes where students could use the strategy.

6. Discuss stages of learning to use the strategy.

7. Obtain students' committment to learn strategy & set goals

What to require for MASTERY:
Students must identify where in their own lives the strategy can be used & why it would be beneficial

STAGE 2: Describe (Phase 2- describe the strategic process)

What your GOAL is:
To make students aware of what the strategy is designed to do & how it works

The teacher will need	Students will need	TIME
Transparencies of Cue Cards, Progress Charts	Each student will need folders containing Cue Cards, Progress Charts,	

1. Provide an advance organizer.

- **What:**
  "We will be learning more about each of the steps of the new strategy. Emphasis will be on understanding how the strategy works and the role each step plays in making the strategy work."
- **Why:**
  "It is important for you to understand what each step in the strategy is designed to do so that you will be able to use these steps to help you .....
- **How:**
  "I will describe each step of the strategy as you look at your cue card that shows the steps."

2. Review rationale for using the strategy.

- **Benefits in school:**
- **Benefits in employment:**
- **Benefits in community life:**

3. Describe, in detail, the steps of the strategy, and how the meaning of the name of the strategy is related to the strategic process.

4. Compare new strategy to old habits

- Ask students to describe how the new strategy is different from, or similiar to the way they usually go about this task. If they have been learning to use other similiar strategies, ask them to compare and contrast the new strategy with these other approaches.

What to require for MASTERY:

1. Given prompts from the teacher, students should be able to describe specifically what each step in the strategy is cueing them to do as they read.
2. Students should be able to describe how the name of the strategy is related to the specific behaviors cued by the strategy steps.

STAGE 3: Model the strategy steps

What your GOALS are:

1. To demonstrate how the new strategy works
2. To demonstrate self-instruction & the thought processes involved in applying the strategy

The teacher will need	Students will need	TIME
Transparencies of Cue Cards, Stimulus materials	Cue Cards Progress Charts Copy of stimulus materials	

1. Review strategy steps & rationale.

2. Provide an advance organizer.

- **What:**
  "I will be performing the strategy and thinking out loud as I do it. You will see how it is done."
- **Why:**
  "To learn to use the strategy yourself, you all will need to see how the strategy works/ how self-instruction works."
- **How:**
  "I will model the strategy first / later, students help me by telling me what to do next."

3. Demonstrate each step of the strategy while thinking out loud.

- Demonstrate how self-instruction cues one to use each strategy step;
- Demonstrate the thought processes that entail each step of the strategy;

4. Involve students in subsequent demonstrations

- Ask students to look at their cue cards of the new strategy and tell you what to do as you perform the strategy;
- Cue students to perform specific behaviors cued by the strategy steps.

What to require for MASTERY:

While looking at the printed steps of the strategy, students should be able to tell the person modeling the technique what to do at each step of the application.

STAGE 4: Verbal Rehearsal of the strategy steps

What your GOALS are:

1. To ensure that students comprehend what each step in the strategy is cueing them to do.
2. To ensure that students memorize the strategy steps to a criterion of 100% correct performance.

The teacher will need	Students will need	TIME
Transparencies of strategy steps	Cue cards of new strategy Progress Charts	

1. Review strategy steps & rationale

2. Provide an advance organizer.

- **What:**

"This activity focuses on understanding what to do and memorizing the strategy steps."

- **Why:**

"It's important to memorize strategy steps in order to be able to tell yourself what to do next when applying the technique."

- **How:**

"We will be doing four things: (1) Comprehension rehearsal to make sure you understand what to do when using the strategy; (2) Rapid fire rehearsal to become fluent at saying the strategy steps; (3) Individual checks and (4) Practice verbally using the strategy

3. Conduct verbal rehearsal exercise of strategy concepts with steps in view.

- Have students read a step, then explain in their own words what the step tells them to do.

4. Conduct verbal rehearsal exercise of strategy steps.

- Have students say strategy step with cues as needed (can look at the step or teacher give hint);
- Have students say steps without cues.

5. Oral quiz.

- Give directions; allow time for study; Students reports when ready;
- Teacher tests students' ability to name and describe the strategy steps

6. If appropriate, verbally practice performing the behaviors cued by the strategy steps

What to require for MASTERY:

1. Students can explain what each strategy step is directing them to do.
2. Students can quickly name, without help, all of the strategy steps in correct order.
3. Where appropriate, students can orally perform the behaviors cued by each of the strategy steps

STAGE 5: Controlled Practice using strategy

What your GOAL is:
To ensure that students master the skills of .....

The teacher will need	Students will need	TIME
Score Sheets	Progress Charts	

1. Review strategy steps, rationale, pertinent aspects of performing the strategy.

2. Advance Organizer:

- What:

  "To enable you to use this strategy to help you remember what you read, we will be doing three types of activities:
  (1) Practicing using the strategy on easy materials, with help
  (2) Practing using the strategy on easy materials, without help
  (3) Learning how to use the strategy on materials that increasingly become like those from regular classes."

- Why:

  "The reason we progress through these 3 phases is so that first, you learn how to use strategy with some help.Once you can do it without help, then you practice a bit to get really good at it. Once the process is learned, then learn to apply it to more difficult situations - first with help, and then on your own.

- How:

3. Give directions for practice activity.

4. Initiate practice activities providing ample prompts & cues to assure initial success.

- Provide guided or prompted practice using the strategy
- Monitor student responses / provide cues & help as needed to assure success
- Review pertinent aspects of performing the strategy as necessary

5. Initiate practice activities which require student independent practice applying the strategy.

- Review pertinent aspects of performing the strategy as necessary

What to require for MASTERY:

STAGE 6: Advanced Practice using the strategy

What your GOAL is:
To assure that students are able to effectively apply the strategy on assignments equal in difficulty to those found in a variety of regular classes.

The teacher will need	Students will need	TIME
Evaluation Guidelines, Score Sheets	Progress Charts,	

1. Review strategy steps, rationale, & pertinent aspects of performing the strategy

2. Provide an advance organizer.

- What:
  "You will be learning how to independently apply the strategy on assignments similar to those found in regular classes."
- Why:
  "We will be practicing using the strategy on these types of assignments so that you will be able to independently use the strategy anytime it's important to .....
- How:
  "You will first learn to use the strategy on grade level assignments with my help, and then to do it without my help."

3. Give directions for practice activity.

4. Initiate practice activities providing ample prompts & cues to assure initial success.

- Provide assignments that simulate those found in a variety of classes
- Monitor students' work / provide cues & help as needed to assure success
- Evaluate students' work using Score Sheet and Evaluation Guidelines
- Give positive / corrective feedback
- Review pertinent aspects of performing the strategy as necessary

5. Initiate practice activities which require students' independent practice applying the strategy on assignments that simulate those found in general education settings.

What to require for MASTERY:

STAGE 7: Posttest

What your GOAL is:

To determine whether students need continued instruction in the strategy.

The teacher will need	Students will need	TIME usually required
Evaluation Guidelines. Score sheets.		

1. Advance Organizer:

- What:

- Why:

"This posttest activity is designed to determine whether you have learned the strategy well enough to shift our emphasis from learning how to use it to making it pay off for you in other classes."

2. Provide Instructions for Posttest Task

3. Score students' responses and give feedback on their performances.

4. Have students compare pretest /posttest scores and describe differences in performance.

What to require for MASTERY:

STAGE 8: Generalization *(Orientation)*

What your GOAL is:

To make students aware of situations and circumstances in which the strategy can be used.

The teacher will need	Students will need	TIME usually required
Stimulus materials	4 x 6 cards Notebooks from current classes Progress Charts	

1. Provide an advance organizer:

- **What:**

"Up to this point, the emphasis has been on learning how to use the strategy. Now the emphasis shifts to learning how to get it to pay off for you. You will be learning about what is involved in applying the strategy in regular classes."

- **Why:**

"Sometimes its easy to forget to use the strategy, and sometimes there are times when the strategy could be used that you didn't realize. Sometimes, the strategy needs to be changed a little to make it work."

- **How:**

"We will be discussing what is involved in recognizing when to use the strategy and how to change it to make it work better. You will also set some goals to use the strategy in regular classes."

2. Discuss situations where use of the strategy is applicable.

3. Facilitate student adaptation of the strategy steps.

- Adapting the strategy to.....

4. Provide students with opportunities to practice using student adapted versions of the strategy.

5. Discuss cues for strategy use found in current courses.

- Students list courses, requirements in each course, and cues that signal a need for use of the strategy

6. Obtain a written committment to generalize the strategy & set goals.

7. Direct students to make own cue cards.

- Steps of the strategy are written on each cue card
- Cue cards are affixed to notebook of each class where strategy can be used

What to require for MASTERY:

1. Students should be able to discriminate when adaptations of the strategy are needed
2. Students should be able to make and effectively use adaptations of the strategy
3. Students should have set specific goals with regard to which classes the strategy will be applied

Part 3: The Tactic Procedure

TACTIC:

Developing Strategy Interventions

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The University of South Carolina

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The University of Kansas

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The University of Kansas

January 30, 1989

Target a setting demand
Arrive at strategy steps
Create a remembering system
Translate for learning
Investigate the strategy
Construct instructional plan

TACTIC

DEVELOPING STRATEGY INTERVENTIONS

Stages of Development

T arget a setting demand

A rrive at strategy steps

C reate a remembering system

T ranslate for learning

I nvestigate the strategy

C onstruct instructional plan

TACTIC
DEVELOPING STRATEGY INTERVENTIONS

STAGE 1

TARGET A SETTING DEMAND

1. Target a group of students
2. Identify the critical success settings
3. List the demands for the first setting.
4. List the demands for the second setting
5. List the demands for the remaining settings
6. Target a general setting demand
7. Analyze the demand
8. Target a a specific setting demand
9. Specify the strategy development goal

T = Target setting demands

NAME: _____

SETTINGS:	DEMANDS:	LEARN HOW TO:	✓

STRATEGY DEVELOPMENT GOAL SPECIFICATION

T = Target setting demands

NAME: Keith & Fran

7th grade: Mark, Johnathon, Dan, Shane, Greg, Josh

SETTINGS:	DEMANDS:	LEARN HOW TO:	✓
1. Social Studies	1. (Read text) ✓✓	Survey Chapter	✓✓
2. Earth Science	1. Take notes ✓✓	(Get information from illustrations)	✓✓ ✓✓
3. Home Room	1. Write reports ✓	check comprehension	✓✓
4. Music	1. Take tests ✓✓	use text cues	✓✓
5 ~~Sports Events~~	1. Take vocabulary quizzes ✓	take notes	✓
	2. Do chap questions as homework ✓✓	answer questions in text	✓
	2. Do projects ✓✓	summarize	✓
	2. Complete assignments in class ✓	identify main idea and details	✓
	2. Participate in large group discussions ✓	identify cause and effect	
	2. small group cooperation ✓	draw conclusions	

STRATEGY DEVELOPMENT GOAL SPECIFICATION

In order for students to meet the general setting demand of getting information from text, a strategy will be developed that will teach students how to obtain information from visuals.

TACTIC
DEVELOPING STRATEGY INTERVENTIONS

STAGE 2

ARRIVE AT STRATEGY STEPS

1. Engage in situational imagining
2. Evaluate the situational imagining
3. Define the overt procedure
4. Define the covert operations
5. Identify prerequisites
6. Review and finalize

Situational Imagining

I am reading in my book on earth science....

....I see the reference to "water cycle" and see "Figure 2" I don't remember anything about this, I am not sure what it really is...I decide I need to know more about water cycle.... the visual will give me more information....

...I look at Figure 2 - I see the title "water cycle" - I read the caption and I know now that water cycle includes the words "evaporates" and "condenses"..the caption says that water evaporates into the air and that it condenses to form clouds..Hmm... water turns into clouds....it also says that the water returns to the earth in the form of rain... I guess from the clouds....

....what does the visual show?..I need to read the labels and look at the picture...

In the visual....I see that the the land is shaded and that the ocean and water are not shaded...Let me see... the clouds in sky show that it is raining or snowing....okay...so what is the "water cycle".... I am not sure so I need to look some more.....

...okay.... there are arrows....I see arrows from rain going to the clouds - what does this mean?....there are also arrows coming from the lakes, soil, the ocean ... I know...it must mean that water form the earth can form clouds...but how? ....it seems that the water turns to water vapor first then it turns into clouds?...

....So earth water turns to water vapor which forms clouds - and I see water comes form clouds in the form of rain and snow and it starts over again - this must be the cycle....the water cycle let me read caption again - yes ..that fits - yes, water from rivers or lakes evaporates, which means it forms water vapor, and the water vapor forms clouds and the clouds return the water to the earth in the form of rain or snow or sleet and this water forms the rivers and lakes and it starts all over again.... So how does this fit into the chapter?...what is chapter about? Oceanography ...the study of ocean

...The ocean must play a role in the water cycle - there is an ocean in the picture - yes, it is part of cycle - OK - what do I need to remember from this visual - I need to remember that the water cycle is the process of earth water turning into water vapor - this is evaporation - which makes clouds - which returns water to earth as snow or rain....the ocean is a major source of water and must be a major part of the water cycle...

...Great!...now...let me go back to what I was reading - I need to start back at the beginning of the paragraph so I can put this information in - yes - it makes sense I understand and can "see" the water cycle - I know this - I can go on...

THE WATER CYCLE

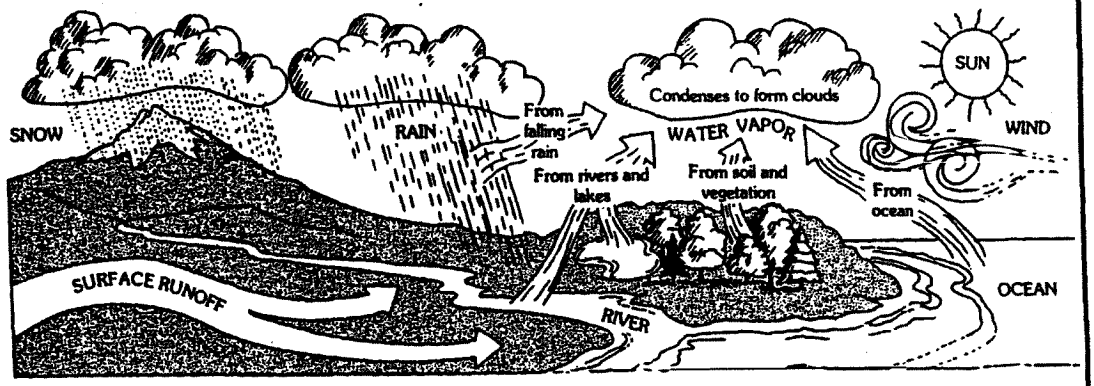

FIGURE 2: Water from lakes, plants and oceans evaporates into the air and condenses to form clouds. Eventually the water returns to the earth in the form of sleet, hail, snow or rain.

A = Arrive at strategy steps

PROCEDURES (What you do...)	INSIGHTS/EXPLANATIONS/DECISIONS (What goes on in your head...)

A = Arrive at strategy steps

PROCEDURES (What you do...)	INSIGHTS/EXPLANATIONS/DECISIONS (What goes on in your head...)
1 Read the text	
2. Watch for references to visuals	
3. Find visual	
4. Examine visual	
5. Put information in notes	
6. Continue reading	

CHAPTER 3

PHYSICAL REGIONS OF THE UNITED STATES

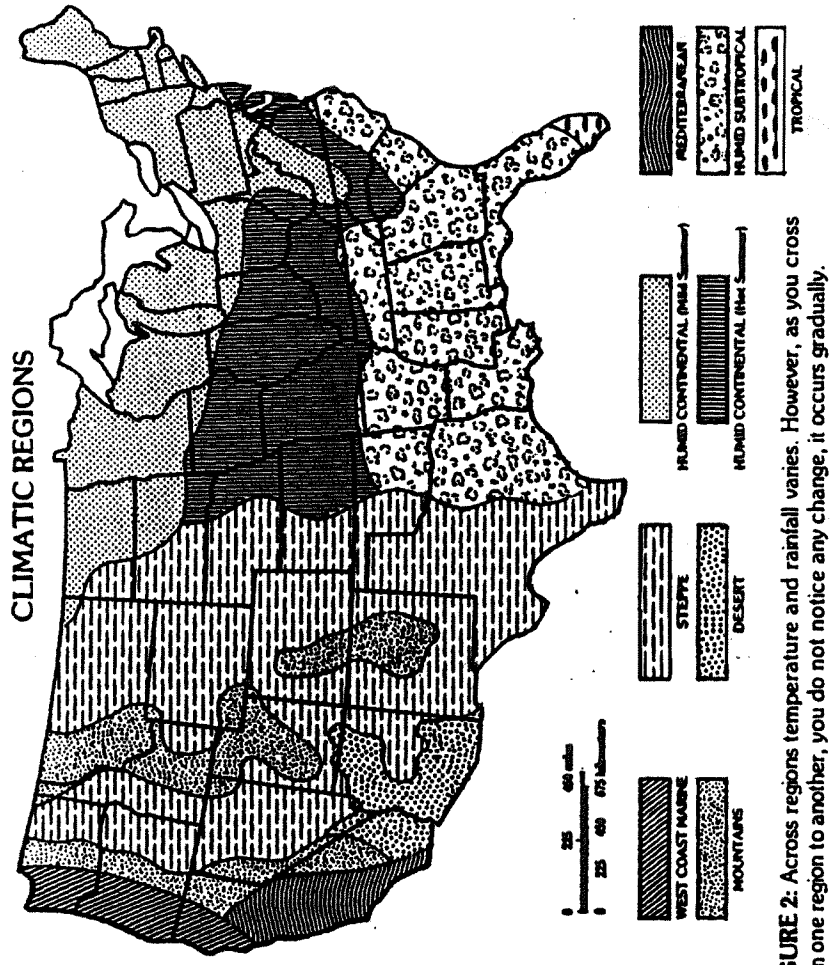

FIGURE 2: Across regions temperature and rainfall varies. However, as you cross from one region to another, you do not notice any change, it occurs gradually.

MODEL VISUAL AID: MAP #1 — DISTRIBUTION

CHAPTER 10

SOURCES OF ENERGY

MODERN ENERGY USE

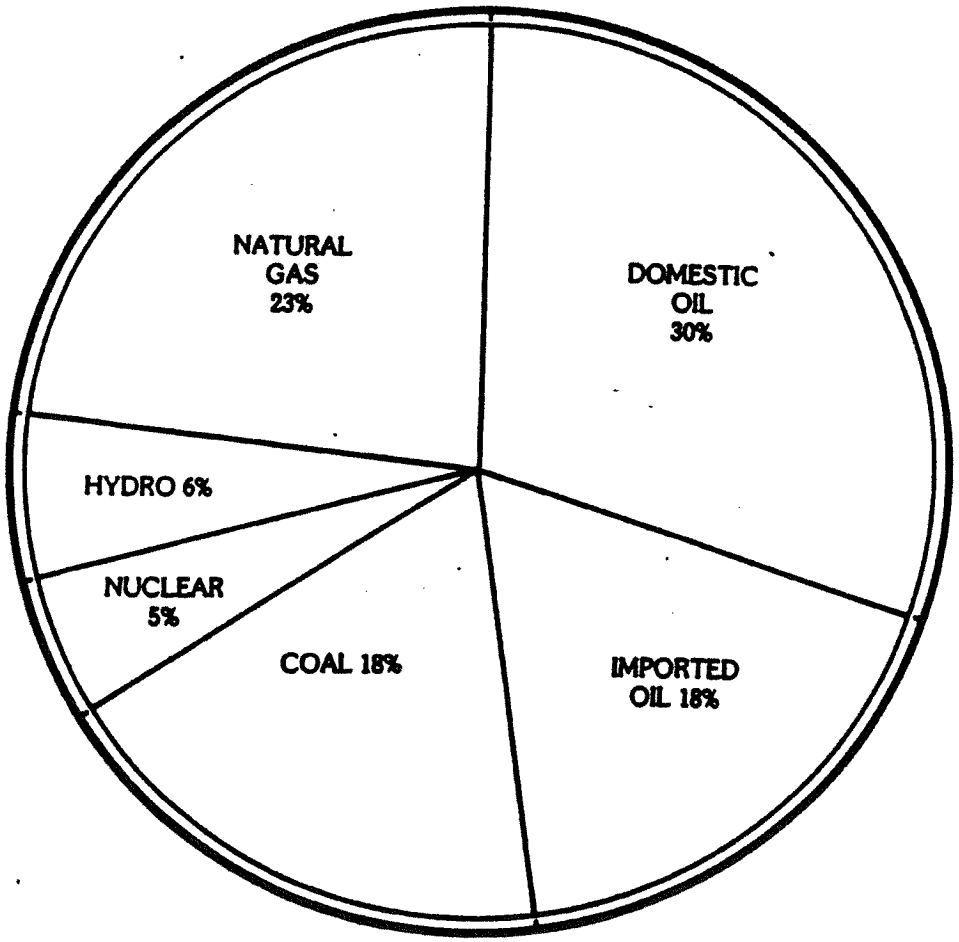

FIGURE 2: In 1985 only 5 percent of all energy use in the continental United States came from Nuclear Energy.

MODEL VISUAL AID: DIAGRAM #2 — CIRCLE GRAPH

STAGE 3

CREATE A REMEMBERING SYSTEM

1. Organize worksheets
2. Reformulate key action statements
3. Reduce the number of steps
4. Identify the key action words
5. Reword the steps
6. Develop the remembering system
7. Reformulate the covert operation statements
8. Link the remembering system to the strategy
9. Play with the remembering system

C = Create a remembering system

REMEMBERING SYSTEM

MEMORY DEVICE	INTENDED ASSOCIATIONS (What each step cues the student to do . . .)

Link Device To Strategy

C = Create a remembering system

REMEMBERING SYSTEM

MEMORY DEVICE	INTENDED ASSOCIATIONS (What each step cues the student to do . . .)
Attend to illustrations	1. As you read watch for cues related to visuals 2. When you see a visual, ask yourself if the visual will help you understand, organize or remember the key information, if "yes" - go on to the next strategy step, if "no" - continue reading
Check for CLUES Captions Lines Unusual Explanations Shading	3. Look for CLUES in the visual that will help you interpret it. 4. Read the Captions and labels to see what the visual is about and try to put the words and visuals together 5. See if lines have been used to divide or organize information 6. Look for Unusual features such as arrows, insets, or exaggerations of parts of the visual 7. Use Explanations of the visual that are provided by Keys, a compass, or a scale 8. See if shading has been used to focus attention and show importance
Target relationships and take action	9. Using all the information from CLUES, decide what is the main idea of the visual 10. Identify the details that support the main idea - be able to give examples 11. Decide how the information from the visual relates to the section and the rest of the topic 12. Put the information in your notes or take action on the information 13. Go back to reading the text and continue to Attend to Illustrations

Link Device To Strategy

1. One way to get into the "ACT" as you read is to inspect the visuals
2. Each "ACT" of a play reveals more about the story - you can gain more information as you read if you "ACT" on the visuals.

STAGE 4

TRANSLATE FOR LEARNING

PART I: The strategy's when, where, and why

1. Construct a definition
2. Construct rationales
3. Specify general situation characteristics

PART II: Student progress and mastery evaluation system

4. Develop an evaluation system
   a. Build an effectiveness measure
   b. Build an efficiency measure

T = Translate for learning

CHARACTERISITICS OF SITUATIONS

YOU SHOULD USE THIS STRATEGY WHENEVER:

EXAMPLES	NON-EXAMPLES

EVALUATION SYSTEM

PROCESS	PRODUCT

T = Translate for learning

CHARACTERISITICS OF SITUATIONS

YOU SHOULD USE THIS STRATEGY WHENEVER:

1. you see the cue words "See Figure," "See the map", "Look at...", "The graph on page..."
2. When information is presented visually (chalkboard, overhead projector)
3. Whenever you read something with visuals (text, newspaper, magazine)
4. Following directions with illustrations
5. Following directions to make something work

EXAMPLES	NON-EXAMPLES
Vocational manual with visuals	Lecture with no visuals

EVALUATION SYSTEM

PROCESS	PRODUCT
	1. Given topics based on visual, explains topic including at least one main idea and 2 details 2. Reconstructs visuals and explains 3. Answers comprehension questions over visuals 90% accuracy

TACTIC
DEVELOPING STRATEGY INTERVENTIONS

STAGE 5

INVESTIGATE THE STRATEGY

1. Evaluate the usefulness of the strategy
2. Evaluate strategy content features
3. Evaluate strategy design features
4. Evaluate strategy evaluation features
5. Modify the strategy

Strategy Evaluation Checklist

Answer each evaluation question by checking the "yes' or "no" box. A check in the "yes" box (cued by the solid line) will indicate that the feature or features addressed by the question are appropriately included in the strategy. A check in the "no" box (cued by a dotted line) will indicate that a potential problem exists related to the feature or features addressed by this question. If you make a check in a "no" box, make a note in the comments column that explains your check.

1. Evaluate Strategy Usefulness.

Comments

no yes	a. Does the strategy address a key problem that is found in settings that the student must currently face?
no yes	b. Will the student be required to frequently apply the strategy to meet the setting demand?
no yes	c. Can the strategy be generalized across a variety of settings, situations, and contexts?
no yes	d. Will the student be required to face similar demands in the future where frequent application of the strategy might be necessary?

2. Evaluate Strategy Content Features.

Comments

no yes	a. Does the strategy contain a set of steps that lead to a specific and successful outcome?
no yes	b. Are the steps of the strategy sequenced in a manner that leads to an efficient approach to the task?
no yes	c. Do the steps of the strategy cue the student to use specific cognitive strategies?
no yes	d. Do the steps of the strategy cue the student to use metacognition?
no yes	e. Do the steps of the strategy cue the student to select and use appropriate procedures, skills, or rules?
no yes	f. Do the steps of the strategy cue the student to take some type of overt/physical action?
no yes	g. Are all overt/physical actions supported by a clear explanation of the associated mental actions that can take place?
no yes	h. Can all the steps of the strategy be performed in a limited amount of time?
no yes	i. Are there any unnecessary steps or explanations in the strategy?
no yes	j. Does the strategy contain information related to why, when, and where to use the strategy.
no yes	k. In general, does the strategy include guidelines related to how to think and act when planning, executing, and evaluating performance on a task and its outcomes?

3. Evaluate Strategy Design Features.

Comments

no yes	a. Are entry level skills clearly specified or taken into consideration as part of the steps of the strategy?
no yes	b. Has a remembering system been incorporated into the intervention to facilitate memorization of the strategy steps and explanations?
no yes	c. Is each step of the remembering system short?
no yes	d. Does each step of the remembering system begin with a verb or a key word directly related to the mental or physical action that the step is designed to cue.
no yes	e. Are there seven or less key steps in the remembering system for the strategy.
no yes	f. Does the remembering system relate to the overall process that the strategy is designed to address.
no yes	g. Are the language and vocabulary used to convey the strategy steps and explanations uncomplicated and familiar.
no yes	h. Will the measurement system provide ongoing information that will demonstrate to the student and the teacher that the demands of the setting are being met?
no yes	i. Will the measurement system provide ongoing information to the student and the teacher related to how the strategy is being learned and used?

General Comments

Ellis, Lenz, & Clark, 1988

TACTIC
DEVELOPING STRATEGY INTERVENTIONS

STAGE 6

CONSTRUCT INSTRUCTIONAL PLAN

DESIGN INSTRUCTION FOR THE STAGES OF STRATEGY AQUISITION AND GENERALIZATION:

1. **Pretest**
2. **Describe**
3. **Model**
4. **Rehearsal**
5. **Controlled practice**
6. **Advanced practice**
7. **Posttest**
8. **Generalization**
   a. **orientation**
   b. **activation**
   c. **maintenance**

STAGE 1: Pretest

What your GOALS are:

To determine whether students need instruction in the strategy for .....

To determine how students will likely respond to the strategy instruction.

The teacher will need	**Students will need**	**TIME required**
Evaluation Guidelines, Score sheets, Progress Charts,		

1. Provide an advance organizer:

- **What:**

- **Why:**

2. Instructions for Pretest Task

- **For the teacher:**

- **For the student:**

What to require for MASTERY:

STAGE 2: Describe (Phase 1- describe rationale for learning the strategy)

What your GOALS are:

1. To make students aware of the need to learn the strategy & where and when it can be used
2. To make students aware of what the strategy is designed to do & how it works
3. To obtain a committment to learn the strategy & set goals for rate of learning

The teacher will need	Students will need	TIME usually required
Transparencies of Cue Cards, Progress Charts, Management Charts Calendar	Each student will need folders containing Cue Cards and a Progress Chart	

1. Provide an advance organizer:

- **What:**

  "We will be beginning a new unit on learning a strategy you will use to help you .....

  Most students master this strategy in _____ weeks".

- **Why:**

- **How:**

  "We will be learning about where the strategy can be used, what is involved in learning it, & how the strategy works. We will also be setting some goals for learning the strategy."

2. Briefly review the steps of the strategy.

3. Discuss results other students have experienced.

Before learning the strategy ____ After learning the strategy

4. Provide rationale for using the strategy.

- **Benefits in school:**

- **Benefits in employment:**

- **Benefits in community life:**

5. Identify real assignments in specific classes where students could use the strategy.

6. Discuss stages of learning to use the strategy.

7. Obtain students' committment to learn strategy & set goals

What to require for MASTERY:

Students must identify where in their own lives the strategy can be used & why it would be beneficial

STAGE 2: Describe (Phase 2- describe the strategic process)

What your GOAL is:
To make students aware of what the strategy is designed to do & how it works

The teacher will need	Students will need	TIME
Transparencies of Cue Cards, Progress Charts	Each student will need folders containing Cue Cards, Progress Charts,	

1. Provide an advance organizer.

- **What:**
  "We will be learning more about each of the steps of the new strategy. Emphasis will be on understanding how the strategy works and the role each step plays in making the strategy work."
- **Why:**
  "It is important for you to understand what each step in the strategy is designed to do so that you will be able to use these steps to help you .....
- **How:**
  "I will describe each step of the strategy as you look at your cue card that shows the steps."

2. Review rationale for using the strategy.

- **Benefits in school:**
- **Benefits in employment:**
- **Benefits in community life:**

3. Describe, in detail, the steps of the strategy, and how the meaning of the name of the strategy is related to the strategic process.

4. Compare new strategy to old habits

- Ask students to describe how the new strategy is different from, or similiar to the way they usually go about this task. If they have been learning to use other similiar strategies, ask them to compare and contrast the new strategy with these other approaches.

What to require for MASTERY:

1. Given prompts from the teacher, students should be able to describe specifically what each step in the strategy is cueing them to do as they read.
2. Students should be able to describe how the name of the strategy is related to the specific behaviors cued by the strategy steps.

STAGE 3: Model the strategy steps

What your GOALS are:

1. To demonstrate how the new strategy works
2. To demonstrate self-instruction & the thought processes involved in applying the strategy

The teacher will need	Students will need	TIME
Transparencies of Cue Cards, Stimulus materials	Cue Cards Progress Charts Copy of stimulus materials	

1. Review strategy steps & rationale.

2. Provide an advance organizer.

- **What:**
  "I will be performing the strategy and thinking out loud as I do it. You will see how it is done."
- **Why:**
  "To learn to use the strategy yourself, you all will need to see how the strategy works/ how self-instruction works."
- **How:**
  "I will model the strategy first / later, students help me by telling me what to do next."

3. Demonstrate each step of the strategy while thinking out loud.

- Demonstrate how self-instruction cues one to use each strategy step;
- Demonstrate the thought processes that entail each step of the strategy;

4. Involve students in subsequent demonstrations

- Ask students to look at their cue cards of the new strategy and tell you what to do as you perform the strategy;
- Cue students to perform specific behaviors cued by the strategy steps.

What to require for MASTERY:

While looking at the printed steps of the strategy, students should be able to tell the person modeling the technique what to do at each step of the application.

STAGE 4: Verbal Rehearsal of the strategy steps

What your GOALS are:
1. To ensure that students comprehend what each step in the strategy is cueing them to do.
2. To ensure that students memorize the strategy steps to a criterion of 100% correct performance.

The teacher will need	Students will need	TIME
Transparencies of strategy steps	Cue cards of new strategy Progress Charts	

1. Review strategy steps & rationale

2. Provide an advance organizer.

- **What:**
  "This activity focuses on understanding what to do and memorizing the strategy steps."
- **Why:**
  "It's important to memorize strategy steps in order to be able to tell yourself what to do next when applying the technique."
- **How:**
  "We will be doing four things: (1) Comprehension rehearsal to make sure you understand what to do when using the strategy; (2) Rapid fire rehearsal to become fluent at saying the strategy steps; (3) Individual checks and (4) Practice verbally using the strategy

3. Conduct verbal rehearsal exercise of strategy concepts with steps in view.

- Have students read a step, then explain in their own words what the step tells them to do.

4. Conduct verbal rehearsal exercise of strategy steps.

- Have students say strategy step with cues as needed (can look at the step or teacher give hint);
- Have students say steps without cues.

5. Oral quiz.

- Give directions; allow time for study; Students reports when ready;
- Teacher tests students' ability to name and describe the strategy steps

6. If appropriate, verbally practice performing the behaviors cued by the strategy steps

What to require for MASTERY:
1. Students can explain what each strategy step is directing them to do.
2. Students can quickly name, without help, all of the strategy steps in correct order.
3. Where appropriate, students can orally perform the behaviors cued by each of the strategy steps

STAGE 5: Controlled Practice using strategy

What your GOAL is:
To ensure that students master the skills of .....

The teacher will need	Students will need	TIME
Score Sheets	Progress Charts	

1. Review strategy steps, rationale, pertinent aspects of performing the strategy.

2. Advance Organizer:

- What:

  "To enable you to use this strategy to help you remember what you read, we will be doing three types of activities:
  (1) Practicing using the strategy on easy materials, with help
  (2) Practing using the strategy on easy materials, without help
  (3) Learning how to use the strategy on materials that increasingly become like those from regular classes."

- Why:

  "The reason we progress through these 3 phases is so that first, you learn how to use strategy with some help.Once you can do it without help, then you practice a bit to get really good at it. Once the process is learned, then learn to apply it to more difficult situations - first with help, and then on your own.

- How:

3. Give directions for practice activity.

4. Initiate practice activities providing ample prompts & cues to assure initial success.

- Provide guided or prompted practice using the strategy
- Monitor student responses / provide cues & help as needed to assure success
- Review pertinent aspects of performing the strategy as necessary

5. Initiate practice activities which require student independent practice applying the strategy.

- Review pertinent aspects of performing the strategy as necessary

What to require for MASTERY:

STAGE 6: Advanced Practice using the strategy

What your GOAL is:
To assure that students are able to effectively apply the strategy on assignments equal in difficulty to those found in a variety of regular classes.

The teacher will need	Students will need	TIME
Evaluation Guidelines, Score Sheets	Progress Charts,	

1. Review strategy steps, rationale, & pertinent aspects of performing the strategy

2. Provide an advance organizer.

- What:
  "You will be learning how to independently apply the strategy on assignments similar to those found in regular classes."
- Why:
  "We will be practicing using the strategy on these types of assignments so that you will be able to independently use the strategy anytime it's important to .....
- How:
  "You will first learn to use the strategy on grade level assignments with my help, and then to do it without my help."

3. Give directions for practice activity.

4. Initiate practice activities providing ample prompts & cues to assure initial success.

- Provide assignments that simulate those found in a variety of classes
- Monitor students' work / provide cues & help as needed to assure success
- Evaluate students' work using Score Sheet and Evaluation Guidelines
- Give positive / corrective feedback
- Review pertinent aspects of performing the strategy as necessary

5. Initiate practice activities which require students' independent practice applying the strategy on assignments that simulate those found in general education settings.

What to require for MASTERY:

STAGE 7: Posttest

What your GOAL is:

To determine whether students need continued instruction in the strategy.

The teacher will need	Students will need	TIME usually required
Evaluation Guidelines. Score sheets.		

1. Advance Organizer:

- **What:**

- **Why:**

"This posttest activity is designed to determine whether you have learned the strategy well enough to shift our emphasis from learning how to use it to making it pay off for you in other classes."

2. Provide Instructions for Posttest Task

3. Score students' responses and give feedback on their performances.

4. Have students compare pretest /posttest scores and describe differences in performance.

What to require for MASTERY:

STAGE 8: Generalization *(Orientation)*

What your GOAL is:

To make students aware of situations and circumstances in which the strategy can be used.

The teacher will need	Students will need	TIME usually required
Stimulus materials	4 x 6 cards Notebooks from current classes Progress Charts	

1. Provide an advance organizer:

- **What:**

"Up to this point, the emphasis has been on learning how to use the strategy. Now the emphasis shifts to learning how to get it to pay off for you. You will be learning about what is involved in applying the strategy in regular classes."

- **Why:**

"Sometimes its easy to forget to use the strategy, and sometimes there are times when the strategy could be used that you didn't realize. Sometimes, the strategy needs to be changed a little to make it work."

- **How:**

"We will be discussing what is involved in recognizing when to use the strategy and how to change it to make it work better. You will also set some goals to use the strategy in regular classes."

2. Discuss situations where use of the strategy is applicable.

3. Facilitate student adaptation of the strategy steps.

- Adapting the strategy to.....

4. Provide students with opportunities to practice using student adapted versions of the strategy.

5. Discuss cues for strategy use found in current courses.

- Students list courses, requirements in each course, and cues that signal a need for use of the strategy

6. Obtain a written committment to generalize the strategy & set goals.

7. Direct students to make own cue cards.

- Steps of the strategy are written on each cue card
- Cue cards are affixed to notebook of each class where strategy can be used

What to require for MASTERY:

1. Students should be able to discriminate when adaptations of the strategy are needed
2. Students should be able to make and effectively use adaptations of the strategy
3. Students should have set specific goals with regard to which classes the strategy will be applied