

# Evidence-Based Interventions

**(Drawn from the research literature  
describing interventions for  
academic and social/behavioral problems)**

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## Introduction

The interventions in this document are supported by research about their effectiveness for a variety of academic and social-emotional behavior problems. In many cases, they can be modified for use with different academic content areas or behaviors, and with individuals, groups, or entire classes. Because the success of an intervention depends on its appropriateness, the process of selecting an intervention must include a consideration of the reasons why the problem is occurring. For this reason, possible hypotheses for academic problems and for social-emotional behavior problems are presented below.

### Hypotheses for Academic Performance Problems (Based on Daly, Witt, Martens, & Dool, 1997)

Consider which of the following hypotheses represents a likely explanation for the learner's academic performance problems. The hypotheses are arranged in the order in which they should be considered (i.e., consider the likelihood of hypothesis #1 first), since interventions become more complex as we proceed down the list.

Once a likely hypothesis has been determined, review its accompanying intervention "principle," and select interventions that reflect this principle.

1. They do not want to do it.  
**Principle:** Provide incentives for accurate performance; Provide choices to enhance motivation
2. They haven't spent enough time doing it.  
**Principle:** For accuracy problems, provide highly structured tasks with immediate feedback; For fluency problems, provide tasks with high success rate to increase responding
3. They have not had enough help to do it.  
**Principle:** Increase rate of complete learning trials (prompt, response, feedback)  
If accuracy problem, target skill problem itself by providing instruction and strategy training, and by modeling the skill and providing error correction  
If fluency problem, increase practice, drill, and incentives for responding
4. They have not had to do it that way before (i.e., the learner must adapt skills, or use different skills, in order to perform successfully).  
**Principle:** Change instructional materials so they require the skills that are intended to be taught; Use activities that require use of the skill in the context in which the skill is used in "the real world"
5. It is too hard.  
**Principle:** Increase student responding using better matched instructional materials

### Hypotheses for Social/Behavioral Problems (Based on Witt, Daly, & Noell, 2000)

Consider which of the following hypotheses represents a likely explanation for the learner's behavior, based on your functional analysis of the behavior (i.e., your analysis of environmental antecedents and consequences of the behavior, and your judgment about the purpose the behavior appears to serve).

Once a likely hypothesis has been determined, review its accompanying intervention "principle," and select interventions that reflect this principle.

*For behavioral "excesses" (goal is to reduce problem behavior)*

1. Situational factors prompt the behavior (e.g., directive, unstructured task/situation, noise, peer provocation).  
**Principle:** Remove/change antecedent; Teach alternative behavior
2. They want to escape or avoid something (e.g., difficult task, non-preferred activity).  
**Principle:** Eliminate escape/avoidance following problem behavior; Make escape contingent on appropriate behavior
3. They want to get something (e.g., activity, object, sense of significance/belonging, power).  
**Principle:** Block delivery of desired consequence; Promote/reinforce a positive replacement behavior

*For behavioral "deficiencies" (goal is to increase desired behavior)*

1. They lack the necessary skill ("can't do it")  
**Principle:** Teach the skill; Teach when to use the skill; Build environmental support for skill use
2. They have the skill, but they don't use it consistently ("won't do it")  
**Principle:** Discourage competing behaviors; Change circumstances to motivate skill use.

## Intervention Strategies

### Motivation

#### 1. Choice-making

Research demonstrates that opportunities for students to make choices about their work is associated with higher rates of assignment completion and on-task behavior (Dunlap, DePerczel, Clarke, Wilson, Wright, White, & Gomez, 1994; Seybert, Dunlap, & Ferro, 1996).

Below are several suggestions for classroom practices that provide students with opportunities to make choices:

- a) **Menu of assignments:** Teacher controls number, due dates, and value of each assignment, but student free to choose from list of acceptable options (e.g., book report takes different forms—skit, interview, commercial, etc.)
- b) **Self-scoring and self-correction:** (e.g., Cover, Copy, Compare; use of audiotapes dictating words and their spelling; use of answer key for assignments at “independent” level)
- c) **Requests for assistance:** Student signals when help is needed; student’s permission is asked before adult gives help/advice; student pairs with “study buddy” whose help can be solicited when own efforts inadequate—e.g., at board.
- d) **Varying assignment length:** Worksheets contain critical items within first section; students self-correct when reach designated point in worksheet; if criterion (e.g., 90% accuracy) is met, student exempt from remainder of assignment and can choose among alternative activities. Students told to “do the first \_\_ problems, and as many more as you wish” ... or ... “study for \_\_ minutes, and for as much longer as you wish.”
- e) **Goal-setting and progress charting:** Routinely set short-term goals by asking student, “Tell me the number of problems you think you will be able to work correctly today. Select a number between \_\_ and \_\_ problems.” Graph performance outcomes.
- f) **Student-created homework:** As a homework assignment, students create a homework assignment for a peer, along with an answer key. The assignments are then exchanged and completed by peers as homework on a subsequent day. Also, as a homework assignment, students can be instructed to create questions (again, with an answer key) that will be entered into a pool of items to be used by the teacher in test construction.
- g) **Work for less:** This intervention can be used with any child who fails to complete assigned tasks, but can be especially useful for students with mild disabilities as a way for them to exert choice in reducing the length of their assignments (in place of a unilateral decision about assignment reduction made by the teacher). The teacher gives the child an envelope, which is attached to the child’s desk. The

teacher awards one colored, adhesive “dot” to the child when s/he is working appropriately on an academic assignment; the child puts these dots in the envelope. Later, when the child is working on another assignment (in class or at home), and s/he comes to an item that s/he prefers not to do, s/he can affix one of the collected dots on the paper next to the item, which signals the teacher that the student has chosen not to do this item. Dots can be awarded for other appropriate academic behaviors, such as accuracy of assignments; also, different colored dots can be used for different subject areas.

## 2. Extrinsic Strategies

While extrinsic motivational strategies (i.e., rewards) are effective in establishing behaviors that are not yet part of a student’s repertoire; there are a number of cautions to be observed in their use. Some researchers contend that extrinsic motivational strategies can interfere with the development of intrinsic motivation among children of all ages. This view proposes that individuals who are “paid” for their efforts tend to assign less intrinsic value to those efforts.

Concern has also been expressed about the challenges of using extrinsic strategies with adolescents: First, the use of such strategies can increase dependence on external controls, and contribute to a failure to produce independent learners. Second, in practical terms, the reinforcers that are most potent for adolescents (e.g., peer approval) are beyond the control of adults administering the reinforcement plan. And, finally, the most commonly used form of “extrinsic motivation” with adolescents who are achieving poorly – “counseling” conferences with an adult who displays disapproval or approval for academic performance – has been shown to be the least effective motivational strategy. At best, it produces only moderate and short-lived changes in behavior.

Several recommendations pertain to the use of extrinsic motivational strategies for academic performance problems (Deshler, Schumaker, & Lenz, 1984):

- a) Use extrinsic motivational strategies (i.e., token economies, contracting, etc.) for brief periods **to elicit new behavior** (i.e., behavior the child does not yet demonstrate, such as reading) until the intrinsic rewards of that behavior become apparent to students.
- b) Make external rewards **contingent on the quality of the student’s response**, rather than on the student’s rate of response (e.g., accuracy rather than completion of assignments) so that students are informed about their competence on a task.
- c) **Verbal feedback**, while extrinsic, can be effective as a reinforcer without compromising intrinsic motivation—if feedback given to students includes information that **emphasizes the intrinsically-motivating aspects of the task** (e.g., “Jon, your willingness to put in extra hours on this project really made a difference to the other members of the team.”).
- d) For adolescents, use **self-management procedures** whenever possible. They are effective in achieving academic goals, and consistent with the goal of producing independent learners.

## 3. Contracting

Contracting is used as a method for reaching an agreement with students about expected behavior or academic performance. It has been found to be effective in improving behavior among difficult-to-teach students, and has a high degree of acceptability among teachers (Fuchs, 1991; Martens, Peterson, Witt, & Cirone, 1986).

There are many variations on the use of contracts, but the primary elements appear below:

Procedure:

- a) Define specific behavior (e.g., hand in work before end of period without being asked; complete specified number of problems correctly; etc.) and classroom activities (subjects) to which the contract applies;
- b) Specify criteria for success:
  - Consecutive (less desirable) criterion: Criterion = Earn 70% on 10 *consecutive* days
  - Cumulative (more desirable) criterion: Quantity *adds up* with each success (allows for “bad days”)
  - Consequences should be delivered soon after the desired behavior or performance occurs (i.e., a daily or weekly “payoff”)
  - Bonus reward / penalty clause can be included (when less than a minimum number of points are earned, or when behavior falls below a minimum standard): Child can lose accumulated points (use cautiously!).
- c) Select (with child’s participation) an appropriate positive consequence for satisfactory performance, and specify when and by whom the consequence will be delivered;
- d) Specify the manner in which the child’s performance will be monitored;
- e) Put in writing, and obtain signatures of involved parties. Indicate whether the contract can be re-negotiated upon its expiration.

Additional considerations:

- Keep behavioral or performance requirements realistic / understandable / attainable initially; later (gradually), standards for performance can be raised;
- Keep frequent rewards small; use bigger reward as a bonus or “grand prize” for a series of smaller successes;
- If the behavior involves parent participation or monitoring (e.g., homework), two sets of consequences can be specified – one set to be delivered at school, and one set to be delivered by the parents at home.

## Peer-Assisted Learning

### 4. Reciprocal Peer Tutoring (RPT)

Reciprocal peer tutoring (Fantuzzo, King, & Heller, 1992) is a form of peer-assisted learning in which students administer a practice task to one another, providing assistance through the use of scripted “prompts,” if needed. The procedure for RPT follows:

- a) Student teams are directed to select a goal level of performance (e.g., number of worksheet items correctly completed); the teacher may specify an acceptable range within which the goal should fall.
- b) The teacher then prepares: **Stimulus items** (cards with items/problems on front and solutions on back for various types of skills); **structured worksheets** (with columns headed “Try 1, Try 2, Help, Try 3”); **script of prompts** (cues or suggestions for completing items correctly) for use by student functioning as the “teacher;” and **drill sheet** of 16 problems representing that skill area, to be used for the final quiz.
- c) Students form into dyads, and are given stimulus cards with items printed on them (as above). The cards given to a dyad might represent a common skill on which both students need practice, or 2 separate sets of cards can be used, representing 2 different skill areas/levels for members of the dyad (Skill levels and practice needs are determined through a pre-testing procedure). One student is designated as the “teacher,” and one as the “student.” Each will have the opportunity to be the “teacher” for a 10-minute period.
- d) The “teacher” holds up the card showing its front, and instructs the “student” to compute problem in the worksheet column headed “Try 1.”
- e) If the response is correct, give praise; proceed to the next item. If the answer is incorrect, the “teacher” uses the pre-scripted “prompts”, then instructs the “student” to re-work the problem in the column headed “Try 2.”
- f) If the “student’s” response is incorrect on the 2<sup>nd</sup> try, the “teacher” computes the problem in the “Help” column, explaining the procedure; then “student” re-works the problem in the “Try 3” column. (Classroom aides and/or the classroom teacher should be available to provide assistance to “teachers,” if needed.) This sequence (d) through (f) is repeated during a second 10-minute session, with the “student” now acting as the “teacher.”
- g) After 20 minutes of tutoring, students complete drill sheets containing 16 problems (for particular level of skill identified as appropriate for each student in pre-testing). Students work on the drill sheet for 7 minutes, then exchange and correct papers. The dyad’s score is the number of problems completed correctly by each member of the dyad.
- h) Compare the dyad’s score with the goal; if the goal is met, score a “win.” After 3 “wins,” the classroom teacher may choose to administer a reward, posting winning dyads on the bulletin board, etc.

Option: Parent involvement component: Parents are invited to school meetings (at various times) to learn about RPT, and invited to participate in RPT by (parents choose one):

- a) Administer rewards at home (sign certificate indicating reward had been given—“parent-child involvement” rewards used most often by parents);
- b) Attend and observe class RPT sessions;
- c) Serve as aides during RPT sessions and serve as liaison to other parents



## 5. Team-Assisted Individualization (TAI)

This form of peer-assisted learning (Slavin, 1990) combines peer tutoring with individualized content for practice purposes. It provides highly structured opportunities for skill practice while the classroom teacher works with students at similar levels of skill development.

Procedure:

- a) Form groups of 4-5 members, heterogeneous by skill levels. The scores of group members on the end-of-week quizzes will be averaged to establish the team's number of points.
- b) A pretest is administered; each student is placed at an appropriate curriculum level and given skillsheets for that skill level. The skillsheets consist of blocks of similar items, 4 or 5 to each block.  
The classroom teacher meets with all students (across heterogeneous groups) at the same level of the curriculum for a 5 - 15 minute daily instruction session while the remaining students work independently, using the TAI procedure.
- c) Form pairs or triads (heterogeneous by skill level) within teams. Students begin work (independently) on the first block of items on the first skillsheet in the set.
- d) Students in pairs or triads exchange sheets and check one another's answers, using an answer key. If 4 (80%) in the block are correct, the student proceeds to the next skillsheet. If fewer than 4 answers in the first block are correct, the student continues to work on the same skillsheet, doing the next block of 4-5 items
- e) When students complete the final skillsheet, they take a "checkout" quiz. If their score is at least 80% on the quiz, their partner signs the checkout quiz and certifies that the student is ready to take the final test. If the student's score is less than 80%, teacher assistance is requested; then a 2<sup>nd</sup> "checkout" quiz may be taken.
- f) At the end of the week, average all "checkout" quizzes of team members; team is recognized (posting of absolute scores or improvement scores) if the pre-set team criterion has been achieved.

## 6. Classwide Peer Tutoring (CWPT)

Classwide Peer Tutoring (Greenwood, Delquadri, & Carta, 1988) is widely acknowledged as an effective method for increasing opportunities to respond. It has been shown to improve achievement among typically-achieving and lower-achieving children, including those with mild disabilities. CWPT is thought to be most successful with factual content (e.g., vocabulary words, word recognition, math facts, spelling words).

### I. Training

- a) Students are trained in CWPT over 3 - 4 sessions of 20 - 30 minutes each over several days.
- b) CWPT is introduced as a game to help all students perform better in curricular areas. A basketball analogy may be used: Students earn 2 points for an accurate response on the first try; if responses are inaccurate on the first try, students have an opportunity for a "foul shot" -- that is, 1 point can be earned for an accurate response on the second try.
- c) Successful and unsuccessful tutoring sessions are modeled by teacher / student pairs, and the mechanics of the tutoring process are explained.

- d) Tutors/tutees implement CWPT process in a practice session. Each student pair is visited and given feedback by the teacher.

## II. Implementation

(25-30 minute sessions conducted 4 days per week, with Friday testing)

- a) The class roster is divided in half to form 2 teams
- b) Pairs are formed within each team. Note that the makeup of teams and pairs is varied on a weekly basis.
- c) Prepare needed materials:
  - Two point sheets (one for each member of pair)
  - Two response sheets (one for each member of pair)
  - Tutoring sheet containing items to be practiced (e.g., list of 20 math problems with answers; 20 spelling words; reading passage for oral reading accuracy—one for each pair). The list of items should be long enough to allow pairs to go through the complete list twice during a tutoring session.
  - Help card (one for each pair)

## III. Team Work Procedure

- a) The tutor presents the first item on the tutoring sheet to tutee; the tutee provides a written response on the response sheet. If the response is correct, the tutor assigns 2 points by crossing out the first 2 numbers on the tutoring point sheet and praises the correct response. If the response is incorrect, the tutor gives the correct response. The tutee then repeats the correct response, and writes it 3 times. If the 3 responses are correct, the tutor awards 1 point.
- b) Work continues for 10 minutes; then pairs switch roles for another 10 minute tutoring session. While pairs are working, the classroom teacher circulates, answering questions, and giving 1 to 5 bonus points for pairs who are following the rules and engaging in appropriate tutoring behavior.
- c) At the end of the full 20-minute session, points earned are tabulated by noting last number crossed out on each of the 2 tutoring point sheets.
- d) Point totals may be recorded and displayed on team posters

## 7. Card Games for Math Practice: Sums

- a) Materials: Teacher-made deck of cards, with 15 - 20 cards numbered 5; another 15 - 20 cards numbered 6; and another 15 - 20 cards numbered 7. (This describes the card deck that would be created if the teacher wanted students to practice addition with the numbers 5, 6, and 7 as addends.)
- b) Object: Earn the greatest number of cards to become dealer for next round.
- c) Play: The dealer (who is also the judge) turns 2 cards face-up. The first player to whisper the sum of the numerals on the 2 cards receives them. (Decisions about correctness or ties are made by the dealer/judge.) When all cards have been played, the player with the most cards wins.

This method was reported by Usnick (1991).

## 8. Verbal Rehearsal Strategy: Active Reading

This strategy is employed in a peer-assisted learning format to improve reading comprehension (Archer & Gleason, 1989).

### I. Teach component preparatory skills

- a) Using several short paragraphs, teacher demonstrates "naming the topic of the paragraph;" then students practice naming the topics of several paragraphs
- b) Using several short paragraphs, teacher demonstrates "identifying critical details in the paragraph" and "retelling the topic and details" in one's own words; then students practice.

### II. When student can retell paragraph content fluently:

- a) The teacher instructs students in the RCRC process using the following sequence:  
Modeling, guided practice, and independent practice.  
    Read a paragraph, and tell self the topic and details  
    Cover the paragraph, and  
    Recite the important information in own words  
    Check own recitation by examining paragraph again
- b) Students verbally rehearse the RCRC steps
- c) With a peer, students practice the RCRC strategy with several paragraphs, orally reporting topics and details to teacher or peer (peer uses checklist to note that student (1) said topic, (2) noted important details, (3) used own words)

## 9. Classwide Student Tutoring Teams

Heterogeneous (by skills) groups of 5 to 7 students are formed; during a group session, team members observe the following procedure to learn specific skills or content (Maheady, Sacca, & Harper, 1987):

- a) Groups of students are given practice worksheets displaying a numbered set of problems to be solved. Each group is also given one deck of playing cards with the Joker and face cards removed (or a set of teacher-made cards).
- b) One student (designated the "tutor") draws a card from the deck; its number determines the number of the practice sheet item to be solved.
- c) Each member solves the problem individually.
- d) Students who have written the Correct answer = points; incorrect = get correct answer and re-work problem

- e) After all members have solved problem correctly, new student is designated as “tutor”

## 10. Peer Editing

The technique of Peer Editing (Stoddard & MacArthur, 1993) develops skill in evaluating and improving written work through the process of revision. This technique is thought to be effective because a distinguishing characteristic of poor (vs. good) writers is that they tend to make fewer revisions, and those they do make tend to address mechanics, rather than the overall quality of their writing.

The authors suggest that the following measures of the quality of a written composition can be used for baseline and progress monitoring (scoring):

- a) Number of words written
- b) Proportions of spelling, capitalization, and punctuation errors, as follows:
  - Proportion of spelling errors: Number of misspelled words divided by total number of words
  - Proportion of capitalization errors: Number of beginning-of-sentence capitalization errors divided by total number of sentences
  - Proportion of punctuation errors: Number of end-of-sentence punctuation errors divided by total number of sentences
- c) Number of revisions, including changes in spelling, capitalization, punctuation, format, or morphological changes (e.g., tense, number), and additions
- d) Overall quality of the final draft on a scale from 1 to 7 (unsatisfactory, poor, fair, average, good, very good, excellent)
- e) Quality changes from first to second draft on a 5-point scale from -2 (second draft much worse than the first draft) to +2 (second draft much better than the first)

Procedure:

- a) Give students a sample narrative story. Introduce the peer editing procedure, including discussion of the importance of revision and positive peer support during the revision process
- b) Use a transparency of a sample narrative composition to demonstrate revision procedures
- c) Demonstrate the peer editing procedure using a volunteer student pair; have class practice in pairs using sample narrative composition
- d) Give students copies of peer editing instructions; review each of the 9 steps, using the sample narrative to illustrate each step
- e) Conduct a practice session: Using at least 2 sample stories—one given to each member of a student pair—students each complete the following 2 steps:
  - 1) Listen carefully and follow along as the author reads his/her story aloud
  - 2) Tell the author what you liked best about the story

Students exchange papers, and complete the next 3 steps independently:

- 3) Re-read your partner’s story to yourself
- 4) Ask yourself the four revision questions:
  - Parts? Does it have a good beginning, middle, and ending?
  - Order? Does it follow a logical sequence?
  - Details? Where could more details be added?
  - Clarity? Is there any part that is hard to understand?
- 5) Make notes on the draft based on the revision questions

When finished, students complete the following steps:

- 6) Discuss your suggestions with the author
- 7) Work independently to revise your own paper
- 8) Meet again with your peer editor to discuss the revisions you each made, and to check each other's papers for mechanical errors
- 9) Work independently to make final revisions to your paper

## 11. Reciprocal Teaching

This technique (Palincsar & Brown, 1984) is designed for students who are poor in reading comprehension skills. It is conducted in a discussion format with a small group of students. Initially, the teacher leads the group and provides direction, but students are led to assume responsibility for conducting the comprehension lessons.

The leader directs the group discussion through 4 steps:

- a) Summarizing: Identify and re-state the main idea of a passage (e.g., "What is the topic, and what was the most important thing you learned about the topic?")
- b) Question Generating: Generate comprehension and recall questions from the passage
- c) Clarifying: Decide on a strategy to use when unsure of the meaning of what has been read. Choices: Ask for assistance, re-read, or read ahead.
- d) Predicting: Hypothesize about content and structure of text to be presented next

Procedure for each lesson:

- a) Review the 4 steps above
- b) Leader presents the title of the reading passage
- c) Students predict what passage will be about, and what they would like to learn from it
- d) The group reads the passage silently. Then, the leader asks the questions associated with each of the 4 steps above.

## Self-Management

Self-management interventions are designed to promote students' ability to regulate their own behavior. These interventions include self-monitoring, self-instruction, and self-evaluation techniques (Lloyd, Landrum, & Hallahan, 1991; Shapiro & Cole, 1994). See Strategy #52, **Essential Aspects of Self-Monitoring**.

## 12. Self-Instruction on Academic Tasks

Five primary steps in the process of self-instruction training have evolved from the early work of Donald Meichenbaum (Meichenbaum & Goodman, 1971):

- 1) Teacher models by asking and answering a series of questions (child watches)
- 2) Child does it while teacher "narrates"
- 3) Child does it and narrates, with teacher prompts
- 4) Child does it and narrates without prompts

- 5) Child does it, using “private speech” (not verbalized)

The self-instruction procedure itself employs a series of questions that the child learns to ask him/herself as s/he works; for example:

- a) What should I do here?
- b) Am I doing what I said I would do?
- c) If I make a mistake, how will I fix it?
- d) Let me check my paper before I give it to the teacher.

For self-instruction in the steps needed to solve a math problem (e.g., addition with re-grouping), a series of self-guiding statements specifying each step needed to solve the problem can be created for use by the student (Johnston, Whitman, & Johnson, 1980).

### 13. Strategy-Training

Shapiro (1996) describes a number of strategy-training applications devised by various researchers to address achievement problems in mathematics.

*Attack strategies* are derived from the question, “how does a competent learner solve this problem?” The answer to this question forms the basis for a strategy that students can use to perform various operations. The general procedure is as follows:

- a) List objectives (e.g., adding 1-digit #s; determine speed, given distance and time). The objectives can be sub-divided, if needed, and depending on teacher preferences and student characteristics.
- b) Devise an attack strategy for accomplishing the objective. A student who is an “expert” in solving the problem can be asked to give a detailed description of the strategy s/he uses to solve the problem (e.g., steps in subtraction with re-grouping)
- c) Use direct instruction or self-instruction methods (verbalize steps as problem solved) to teach the attack strategy.

A *self-monitoring checklist* can also be created to enable students to monitor and review their own performance as they complete each step of an academic problem-solving procedure.

- a) Student receives instructions on how to solve the problem
- b) The student learns a self-monitoring procedure developed from error analysis of baseline performance (checklists created so list of self-monitoring items reflects typical errors)

For example:

- I copied the problem correctly
  - I regrouped when I needed to (top # is bigger than bottom #)
  - I borrowed correctly (# crossed out is one bigger)
  - I subtracted all the #s
  - I subtracted correctly
- c) Place + or - on each checklist item. If a - is placed before any of the items, the student must rework the problem without erasing his/her original attempt.
  - d) Points are awarded for correct responses; additional points are awarded if all self-monitoring steps correctly recorded

### 14. Self-Correction Spelling Program

This strategy combines training in a proofreading procedure with self-correction of errors in spelling (Okyere & Heron, 1991).

- a) Using a list of words (e.g., weekly spelling words, graded word lists, reading vocabulary terms, lists of common misspelled words, high frequency words), administer a pre-test to ensure that students do not already know how to spell the words
- b) Teach students how to use 4 basic “proofreading marks” by following the “Model, Lead, Test” teaching format:
  - Show examples of when to use, and when not to use, the proofreading marks by modeling the procedure as students watch;
  - Lead a student through the procedure as other students watch;
  - Students apply proofreading marks to a sample independently; teacher gives them corrective feedback.
- c) Teach students how to use the Self-Correction form:
  - Column 1: Unlearned words; usually 5 to 20; folded under so student can’t see words
  - Column A-1 (Self-Correct); A-2 (Write it Right); B-1 (Self-Correct); B-2 (Write it Right) are blank
  - Dictate words; students write responses in A-1
  - Students expose Column 1 and self-correct each word individually, using proofreading marks
  - While looking at Column A-1 (corrected), students write words correctly in A-2
  - Teacher checks to ensure procedure implemented correctly
  - Fold first 3 columns under so that Column B-1 is exposed
  - Dictate words again; students write responses in B-1
  - Students carry out self-correction procedure; if word spelled correctly, student places ✓ in B-2
- d) Conduct sessions several days each week; success criterion: words correctly spelled 3 times

## 15. Audiotapes for Spelling

This strategy is a simple variation on the self-correction procedure described above; it does not require the use of proofreading marks, and it provides an auditory model of correctly spelled words.

- a) Create two audiotapes:
  - Tape One (practice): Say the word; wait 7-10 sec. - use word in sentence; spell the word)
  - Tape Two (test): Say the word, wait 7-10 sec.- use word in sentence)
- b) Give the student a prepared sheet for practice sessions. The student is instructed to proceed as follows:
  - 1) Start the Practice Tape. Listen to the first word. Turn off the tape recorder.
  - 2) Write the first word in the first column.
  - 3) Turn on the tape recorder.
  - 4) Write the word again while listening to it spelled correctly on the tape.
  - 5) Check spelling against the correct spelling.
  - 6) If correct, go to the next word.
  - 7) If incorrect, turn off the tape recorder and write the word correctly 3 times.
- c) When finished, record the number correct on the first try, and the % of words spelled correctly (results can be graphed by the student). When the student reaches 100% on the practice phase, s/he is ready for the test phase.

- d) Student uses the Test Tape. After hearing the word:
  - Write the word (can leave tape recorder on; teacher's judgment). Note: The Test list differs from Practice sheet only in the elimination of the "correct spelling" column.
  - Go to the next word.
- e) After finishing all words, check spelling against teacher-provided spelling list. Write any incorrect word 3 times in space provided on test sheet.
- f) Score and graph the test results. If the score is 85% or higher, go on to the next list on the Practice Tape. If the score is less than 85%, the student continues practice sessions until a score of 100% is obtained; then, the student re-takes the test.



## 16. Self-Monitoring for Reading Vocabulary

This variation of self-correction also uses an audiotaped presentation of words. Here, the targeted academic skill is accurate and fluent reading of vocabulary words.

- a) Prepare a list of 15 unknown words based on a pre-assessment using current reading materials
- b) Create an audiotape of the words read at 5-second intervals
- c) The student reads each word aloud as the tape recording is played: First, the student reads the word; then, s/he hears the word on tape.
- d) The student indicates + or - to indicate if s/he read the word correctly. (Note that a word is scored as incorrect if the student didn't finish reading it before hearing the word on the tape)
- e) Total the number of words correct and incorrect at the end of the session.

## 17. Cover-Copy-Compare (with Math)

This strategy (Skinner, Turco, Beatty, & Rasavage, 1989) allows students to engage in a practice session incorporating a model-response-feedback sequence.

- a) Look at the problem (printed problem with solution -- model);
- b) Cover the problem/solution with a card;
- c) Write the problem and solution on the right side of the worksheet (or, state problem and answer orally);
- d) Uncover the problem and solution (or, if oral, evaluate accuracy from memory)
- e) Compare the student's own response to the problem with the correct problem/solution (model); if correct, go on to the next item; if incorrect, repeat the procedure until correct

## 18. Cover-Copy-Compare (with Geography)

Skinner, Belfiore, and Pierce (1992) present this variation of Cover-Copy-Compare for use with a Geography lesson (i.e., identifying states on a map of the United States).

- a) Shuffle a set of 10 index cards with the name of a state listed on each (prepare 4 more sets, not yet used, for a total of 50 cards -- one for each state), and place the set of 10 cards upside-down. Draw the first card, and look at the name of the state.
- b) Find the named state on a colored map stapled to the outside of a manila folder—the map is labeled with the names of all states in appropriate locations (model).
- c) Open the folder, place a penny on the map inside the folder (the inside map has no state names) to indicate the location of the named state.
- d) Look at the front of the folder. Compare own answer with the labeled (model) map. If correct, go to the next index card; if incorrect, repeat the procedure with the same card until the correct answer is given.
- e) Move to the next set of 10 cards when a criterion of 90% accuracy for the first set of 10 cards is achieved consistently across 2 sessions.

## 19. HOW

Archer and Gleason (1989) describe a strategy for teaching students the elements of a neat, well-organized paper. The procedure requires the teacher to present positive and negative examples of written work, and to relate characteristics of each to the HOW

heuristic (H: Heading; O: Organized; W: Written Neatly). Students are instructed to evaluate others' written papers, and, when they have mastered the HOW criteria, they are directed to apply these criteria to their own written work.

## 20. Self-Questioning Summarization Strategy

Wong, Wong, Perry, & Sawatsky (1986) devised this strategy for under-achieving and mildly disabled high school students. It is intended to be used as a "during-reading" and "post-reading" strategy to improve comprehension.

Student asks self a series of 6 questions while proceeding through each paragraph and at the end of each section:

- a) In this paragraph, is there anything I don't understand?
- b) In this paragraph, what's the most important sentence (main idea sentence)? Let me underline it.
- c) Let me summarize the paragraph. To summarize, I rewrite the main idea sentence and add important details.
- d) Now, does my summary sentence link up with the sub-heading?
- e) When I have written summary statements for a whole sub-section:
  - Let me review my summary statements for the whole subsection (A subsection is one with several paragraphs under the same sub-heading)
  - Do my summary statements link up with one another?
  - Do they all link up with the sub-heading?
- f) At the end of an assigned reading section: Can I see all the themes here? If yes, let me predict the teacher's test question on this section. If no, let me go back to Step (d).

## 21. Self-Management of Off-Task Behavior and Academic Performance

This comprehensive intervention combines a self-monitoring strategy for off-task behavior with a strategy for planning for assignment completion, setting goals, and monitoring their attainment (Smith, Nelson, Young, & West, 1992). In the study describing this intervention, the strategy was used to facilitate the inclusion of adolescents with mild disabilities in a regular education classroom.

- a) Define students' off-task behavior, e.g.: Failing to use academic materials appropriately (flipping pages; doodling); out of seat without permission; inattention to assigned task for more than 5 seconds; talking to another student; swearing; taunting; teasing; yelling across classroom to another student or teacher; making noises (pencil or foot tapping; tearing paper).
- b) Prepare materials for recording system for off-task behavior: 10-second partial interval (i.e., if the behavior occurs at all during a 10-second interval, it is scored as present).
- c) Define academic performance: % of independent seat work assignment completed (reading and answering chapter questions; dictionary work; grammar worksheets—don't include work not easily quantified); % correct (of assigned items)
- d) After baseline data collection, begin intervention:

Phase I: Match 3 Times with Teacher

- a) Student given index card with intervals and rating key marked on it; student marks rating of own behavior for each of three 10-minute intervals during a 30-min. seatwork session.
  - Behavior is rated on a 5-pt. scale: 5 = Excellent; followed all classroom rules; 3 = Average; violated 1 or more rules during interval, but no serious offenses and no more than 1 teacher warning; 0 = Unacceptable; violated 1 or more rules, and 4 or more teacher warnings
- b) Teacher circles teacher's rating on student's card; if ratings match, student receives the number of points corresponding to the rating, plus 1 bonus point for the match. If the student's rating is within 1 point of the teacher rating, student receives the number of points corresponding to the rating, but no bonus point. Otherwise—if greater than 1 point discrepant from the teacher rating, the student earns no points.
- c) At the end of the 30-minute session, the student totals points earned. This phase continues until the student and teacher ratings have matched in three consecutive sessions.

#### Phase II: Match 3 Times with Teacher and Plan Assignment Completion

- a) Student labels assignments, e.g.: "10 vocabulary words;" "Read chapter 5, which is 28 pages;" "answer 12 comprehension questions."
- b) Student puts assignments in the order in which they should be completed (i.e., look up vocabulary words in dictionary, read chapter, answer questions).
- c) Student divides work equally across the number of days allotted for the completion of the assignments.
- d) Student sets a daily academic completion goal, specifying the amount of work to be completed during the independent work period.
- e) Summary of assignment completion plan: Labeling, sequencing, dividing tasks, and daily task completion goal. Student receives 1 point for each of these elements, as judged by the teacher, plus 1 bonus point for completing all 4 steps.
- f) Add this procedure and points to the matching procedure, i.e., student is expected to follow the goal-setting procedure *and* match ratings with the teacher in three consecutive sessions.

## Phase III: Fading

- a) Fade self-rating and matching to 2 times during the 30-minute work session (i.e., use 15-minute intervals)
- b) Fade assignment planning steps one at a time as the student demonstrates mastery of each step (when the student successfully labels, sequences, divides, and sets a daily completion goal, delete the first step—labeling—from the point card)
- c) Fade self-rating and matching to 1 time at the end of the 30-minute work session; fade another assignment planning step, and so forth.

## Phase IV: Academic Goal Setting

- Student writes the daily task completion goal on point card. The student receives 2 points for an appropriate goal; 3 points for meeting the goal; and 4 points when s/he turns assignment in on time.
- No rating of classroom behavior

## Phase V. of "Regular Classroom" condition: Match 3 Times with Peer and Plan Assignment Completion

- a) Introduce after student consistently receives maximum number of points available in the special education condition (Phases I through IV above).
- b) As in the first condition, student rates own behavior 3 times during a 30-minute session; peer rates behavior; ratings matched (peers receive training by rating their own behavior and matching their ratings with teacher's)
- c) Teacher awards points for use of the assignment planning strategy (labeling, sequencing, dividing, daily goal)

## Phase VI: Fading

Reduce the peer-matching procedure to 1 rating; award points for the assignment completion steps of "divide work" and "daily goal"

## Phase VII: Academic Goal-Setting Only

Student receives 2 points from the teacher for setting a daily academic completion goal; 3 points for meeting that goal, and 4 points for completing and submitting the assignment. At this final phase, no points are awarded for self-ratings.

## 22. Integrated Monitoring Procedure for Teacher and Student

In a chapter in the Stone, Shinn, & Walker text (1991), Doug Fuchs describes an applied research project that combined teacher monitoring of behavior, student self-monitoring of behavior, and inspection of work products by both teachers and students. The major elements of this project are described below:

### *Behavior Monitoring*

- a) Decide on length of intervals for behavior monitoring (3, 4, or 5 min.); decide on length of each observation period (15 - 30 min.).
  - Plan to monitor behavior for 3 weeks: During the 1<sup>st</sup> week, monitoring should be conducted daily; during the 2<sup>nd</sup> and 3<sup>rd</sup> weeks, monitoring should be conducted at least 2 days per week.
- b) Use an audiotape to signal beginning of intervals with a tone or beep.
- c) At the sound of the audiotaped tone, place (-) if behavior occurred during the specified interval; (+) if behavior did not occur during the interval.
- d) At the end of the observation period, calculate the percentage of intervals in which the target behavior occurred (i.e., number of intervals in which target behavior occurred, divided by the total number of intervals).

*Product Inspection*

- a) For 3 weeks, collect an observable product (e.g., worksheet) generated by the student during a specified time period. During the 1<sup>st</sup> week, collect the product daily; during the 2<sup>nd</sup> and 3<sup>rd</sup> weeks, collect the product at least twice per week, unless there has been no improvement in performance (if no improvement, product inspection should be conducted more frequently).
- b) The work product should be collected at the conclusion of a timed work period (e.g., 30 minutes). The student should be told the time limit, as well as the amount and quality of work to be completed (e.g., half the math problems on a worksheet with at least 80% correct). The assigned academic task should address a skill in which the student has achieved a satisfactory degree of accuracy (i.e., it should not require skills that are still in the early stages of acquisition).

After the teacher has conducted behavior monitoring and product inspection for the first 2 days of the first week, the student should be taught the monitoring and inspection procedures, and should begin using them (simultaneously with the teacher's use of the procedures) on the same schedule used by the teacher.

Initially (after the first and second recording periods), the accuracy of the student's self-monitoring recording should be checked. The accuracy of the student's product inspection results should be reviewed after the first several inspections have been completed. Teachers should answer students' questions before proceeding with the intervention for the full 3-week period.

Note that this intervention, which led to substantial changes in the behavior of target students, was accompanied by a contracting intervention, which may have accounted for some of the improvement in behavior and academic performance.

### **23. Classroom Peers as Facilitators of Self-Evaluation**

DuPaul, McGoey, & Yugar (1997) describe an intervention that, like #21 above, involves peers in efforts to facilitate positive academic behavior in inclusive settings. It occurs over three stages: Token reinforcement in the special education classroom; teacher-mediated self-evaluation in the regular education classroom; and peer-mediated self-evaluation in the regular education class.

- a) At the end of a specified period (5 minutes to an entire day), the teacher rates the student's behavior in the special education class (using a 1 to 5 scale); the numeric value of the rating is equivalent to the number of points earned by the student (which can be exchanged for reinforcers);
- b) When an acceptable rate of appropriate behavior under the reinforcement condition has been attained, the student is trained to complete the same ratings as the teacher. A matching condition is employed (if the student's rating matches the teacher's rating, the student receives the point value of the rating plus a bonus point. If there is only a 1-point difference, the student receives the value of the rating only. If the difference is greater than one, the student receives only the point value of the teacher's rating. Points are lost if the student argues with the teacher about the rating.
  - Conduct training with the student by modeling and conducting role-plays of appropriate and inappropriate behavior, and assigning numeric ratings to such behavior.
- c) When the student has attained an acceptable rate of appropriate behavior and proficiency in matching teacher ratings, a "buddy" (peer) from the regular education class is trained in the rating procedure.

- The buddy should be a student whose academic behavior is similar to that of the target student (i.e., some problems with academic behavior, though not severe)
- d) The buddy and target student rate their own behavior and one another's behavior at the end of the class period, and report their ratings to the special education teacher. Points are earned by both the target student and the buddy for the value of their ratings, and for matching one another's ratings.

## Comprehension in Reading and Content Areas

### 24. Warm-Up

The Warm-Up technique (Archer & Gleason, 1989) directs students to preview the content of a reading passage (usually, a chapter in a content area text). This preview enables the student to identify the important information that will be covered, and to develop an organizational framework for the information to be read.

- a) The teacher asks students to read the title of a chapter; the introduction, headings and subheadings in the text; the chapter summary, and questions presented at the end of the chapter.
- b) As students examine different parts of the chapter, they produce written information such as predictions about what is to be learned from the chapter, or one "main idea statement" from the reading.

### 25. LINCS

Explicit methods to teach reading vocabulary to low-achieving and mildly disabled students are especially important, since research demonstrates that these students often fail to acquire information (i.e., the meaning of vocabulary terms) that other students tend to learn through simple exposure. Several strategies for teaching reading vocabulary are presented here.

The LINCS Strategy (Wedel, Deshler, & Schumaker, 1988) is especially useful with new vocabulary terms encountered in content area reading. Its design links new information (i.e., vocabulary words and their definitions) with prior knowledge.

- a) Student writes new word (e.g., "fief") and its definition ("land given by a king for fighting in an army") on a card;
- b) Student makes a mental image of the definition;
- c) Student makes a "reminding word" that sounds like the vocabulary word, and writes it on the back of the card (e.g., "chief");
- d) Student combines the visual image and the reminding word in a short phrase or "story" (e.g., "The man was chief of his land") and writes it on the back of the card;
- e) Student studies the flashcard.

### 26. Synonym Match with Practice

Like the LINCS strategy, the Synonym Match with Practice strategy (Pany, Jenkins, & Schreck, 1982) is designed to teach new vocabulary terms by linking them with prior knowledge.

The teacher prepares for this strategy by finding synonyms (using a thesaurus) for the vocabulary words to be taught.

- a) The student reads the vocabulary word printed on an index card; the teacher states a synonym and a sentence using the target word;
- b) The student repeats the target word and the synonym;
- c) After 4 words have been presented, the teacher reviews all 4 words (stating word and synonym), and shuffles the cards;
- d) The teacher presents all 4 words on the cards, one at a time; the student reads the words and attempts to state their synonyms;
- e) This sequence continues until the student has given the correct synonym for all of the target words on 3 consecutive trials.

## 27. Study Guides

Study Guides (Horton & Lovitt, 1989) are very helpful to adolescents who have difficulty determining important material to be recalled in context area text, and who have difficulty retaining such information. Although it requires advance preparation, the study guides, once prepared, can be re-used by many different students.

- The teacher prepares an outline of main ideas and supporting details contained in a content area text (information should be drawn from the beginning, middle, and end of the material). The outline can take several forms, including a set of questions.
  - a) Prior to reading, the student is given the study guide, and instructed to read and re-read an assigned section of text;
  - b) The student completes the guide as the class answers the study guide questions (or completes the study guide outline) as a group;
  - c) The student studies the completed guide, then takes a quiz whose content mirrors that contained on the study guide.

## 28. Adapting Presentation of Content Materials

Deshler, Schumaker, and Lenz (1984) discuss methods for adapting the presentation of content materials for mildly disabled students. They criticize the common practice of presenting content orally (via audiotaped presentation, or direct reading aloud of the material to the student), noting that research has failed to consistently support the value of this approach. They also note that research fails to support the common practices of changing the text to alter its reading level, and modifying pictures, graphs, and charts.

In place of these practices, they recommend the following procedures:

- a) Mark specific sections of the textbook with a visual code of some sort (e.g., drawing borders around the material to be read, and adding highlighting to important sections or concepts within the material);
- b) Prepare an audiotaped reading of only these (visually coded) sections;
- c) Teach the student to use the visual codes as s/he listens to specially-prepared audiotapes.

*Information presented in advance of reading in content area:*

- a) Advance organizers supplied by the teacher, prior to the lesson/reading (if the adolescent has been taught how to recognize and use advance organizers)
- b) Providing the student with learning goals before reading

## 29. Critical Thinking Maps

Idol (1987) presents Critical Thinking Maps as a study aid that can be taught to students using the Model-Lead-Test format, as follows:

*Phase One: Modeling* (Teacher actions)

- a) Display the critical thinking map (a drawing showing a series of boxes labeled as in (b) below); explain that students can use it to get more out of reading their (social studies) textbook;
- b) Explain each map component as follows:
  - Important Events: Important events, points, or steps that lead to the main intent or idea of the lesson, such as the positive and negative attributes of an issue, or causal and/or temporal points
  - Main Idea/Lesson: The most important message conveyed by the author, whether explicit or implicit, reflecting the author's overall attitudes toward the information presented in the text
  - Other Viewpoints/Opinions: The reader's own viewpoints and opinions about what has been read—that is, background information and knowledge possessed by the reader
  - Reader's Conclusions: The readers' final conclusions about the passage, with reasons to support them based on combined knowledge from all of the preceding map components
  - Relevance to Today: The reader's comparisons between the historical lesson and present day events so that modern people can make better choices by their understanding of past events
- c) Note for students the number of pages to be read;
- d) Read the passage aloud, interrupting yourself as you encounter answers to map components in the text (e.g., "Here is an important event ...");
- e) Fill in the map components on the transparency or chalkboard as you identify answers to them in the lesson;
- f) Read the map components aloud, checking for accuracy and adding more information, as necessary;
- g) Distribute copies of the generic comprehension questions and have students silently read the questions and write down their responses without referring to the passage;
  - Generic comprehension questions: (1) What is the main idea of this passage? (2) What were the important steps that led to the main idea? (3) What are some other points of view or missing information about this topic? (4) What is your own conclusion? (5) How is this passage relevant to a modern problem or issue?
- h) Review the answers to the comprehension questions, and have students correct their responses using red pens;
- i) Continue this modeling phase for 2 lessons, or until students receive a satisfactory rating of their responses to 4 of 5 (80%) comprehension questions.

*Phase Two: Leading*

- a) Distribute copies of map; instruct students to read the passage silently;
- b) In group discussion and with transparency or chalkboard version of the map, assist students in re-examining the passage to complete the map;
- c) Have students re-read what they have written for each map component, checking for accuracy, and adding more information as necessary;
- d) Have students complete the generic comprehension questions;
- e) Review the correct responses; discuss discrepancies between incorrect comprehension answers and the correct map information; have students rewrite incorrect comprehension answers.

*Phase Three: Test*

- a) Discontinue group demonstrations, but provide individual help as needed;
- b) When students obtain satisfactory ratings on all 5 comprehension questions with little or no assistance, discontinue use of the maps.



### 30. Recall Enhancement Routine

This strategy (Bulgren, Schumaker & Deshler, 1994) is used to enhance recall of information presented during a lesson by enhancing its concreteness and meaningfulness.

- a) Present information; ask class to determine whether the information is important and if it should be remembered.
- b) If teacher and students agree that the information should be remembered, form mnemonic devices to aid in recall (e.g., visualization, anagrams using the first letter of each word in a list to be memorized, keywords associated with the concept to be learned).
  - EG: Lesson on ethical code of newspaper editors: Fair, Accurate, Impartial, and Responsible—FAIR; Create sentence: “Newspaper editors are obliged to be fair.”

### 31. Indentation Notes

This technique provides guidelines for effective note-taking, and is especially useful for upper elementary and low-performing junior and senior high school students (Archer & Gleason, 2002). It uses a single paragraph as the unit for reading, and requires students to attend to the paragraph topic and important details. It is helpful for students to be familiar with the “active reading” strategy (No. 8 in this booklet) before using this technique.

- a. Students record headings/subheadings in center of paper, followed by corresponding pg. numbers
- b. Take notes on ea. paragraph, using “indenting” style
  - Read paragraph and record topic
  - Indent and record important details (using abbreviations and symbols)
  - Indent again when recording subordinate details
- c. Check notes for clarity
- d. Next to ea. paragraph section of notes, students write question in margin that could be asked about these notes
- e. Use notes to remember info for class discussion/tests

### 32. Use of Visual Aids in Text (Maps, graphics, etc.)

Although textbooks frequently employ graphic aids for readers, explicit instruction in how to use these visual aids is lacking. Since low-achieving students often ignore visual aids, explicit instruction in their use is needed (Archer & Gleason, 2002).

- a. Determine topic of graphic material by interpreting title or caption
- b. Look at numbers or words across bottom or top, and up and down the left side to understand how the graphic is organized
- c. Locate information in the graphic and answer literal questions about the information
  - Use non-numerical information as well as numerical information (e.g., size of pie pieces, height of bars on bar graph)
  - Teacher guides students in calculating answers to questions by adding, subtracting, or multiplying information in graphs
- d. Students make inferences based on the information
 

*Example:*

  - What are the titles of the two graphs we’re going to compare?

- Notice how the numbers of miners in Virginia and Utah have declined over the years.
- Why might the number of miners have declined?
- What do the numbers across the bottom of each graph refer to?
- What do the numbers on the left side of the graph refer to?
- In which year were the most miners employed in Virginia?
- In which year were the fewest miners employed in Virginia?
- How many more miners worked in Utah than in Virginia in 1925?
- Figure out the difference between the number of miners in the two states in 1945
- What was the total number of people employed in the mines for the two highest employment years in Virginia?

Also need to teach students when to refer to visual aids, and how to move from reading text to the aid, and back again:

- Explicit cues in text? (e.g., “see diagram”) Discussion of topic that is supplemented with visual aid, but no explicit reference to aid?
  - a. Teach students to read in text up to point where visual aid is referenced; place finger at that point in text
  - b. Refer to the visual aid; examine the information
  - c. Resume reading where the finger was keeping the place

### 33. Answering Chapter Questions

Archer & Gleason (2002) recommend a procedure for teaching students how to structure their response to “end of chapter” questions frequently appearing in textbooks.

- a. Teach students how to read question carefully, turn question into part of the answer, and write that part down

*What are three ways to recycle natural resources?*

*Three ways to recycle natural resources are ...*

- b. Students preview, then read a chapter (or part of chapter)
- c. On their own, students read question carefully, change question into part of answer, and write that part down.
- d. Students locate headings or subheadings in section of the chapter that addresses topic referenced in question.
- e. Students read this section until they find the answer, then write the rest of the answer in a complete sentence that answers the question.

### 34. Mnemonic Strategies

Higgins, Boone, & Lovitt (2002) describe types of mnemonic strategies that can be used to help low-achieving students learn factual information. Mnemonic strategies rely on verbal or pictorial cues, and require training in their use. Additionally, many low-achieving students must be cued as to when to use mnemonic strategies.

- a. First-letter mnemonics (use first letter of word, phrase, or sentence as cue to recall information ... egbdf for musical scale)
- b. Keyword mnemonics (students presented with illustration phonetically similar to unfamiliar term to be learned ... a picture of “box” to remember mineral “bauxite”)
- c. Pegword mnemonics (students taught to connect series of numbers to familiar objects that rhyme with numbers ... 1 = bun; 2 = shoe; association between number and pegword helps students remember sequential information)
- d. mimetic mnemonics (actual pictorial representation of info to be learned -- chambers of heart taught via illustration of heart w / chambers identified)

- e. symbolic mnemonics (common symbols used to represent info to be learned – donkey for Democratic party; coin for money)

## Reading Fluency

### 35. Hypothesis/Test (HT) Method

In the Hypothesis/Test Method (Dahl, 1979), students are taught to read phrases or sentences rapidly by predicting the words that complete the phrases. It is based on the finding that skilled readers predict words on the basis of a combination of some minimum amount of graphic information and the context within which the words appear. Decoding of unfamiliar words in isolation is viewed as a more difficult task for unskilled readers, in that it provides less information than unfamiliar words presented in context. This strategy targets reading fluency, rather than gains in word recognition alone. The sequence of activities/skills is as follows:

The student is taught and practices each of the skills from (a) through (f) below. When these skills have been mastered, the student practices (g) below until s/he is able to read sentences fluently.

- a) Saying a word that begins with a particular sound;
- b) Identifying (by stating) the beginning letter of a word said aloud;
- c) Identifying (by pointing at) the beginning letter of a word said aloud;
- d) Providing the last word of incomplete spoken sentences (this is known as using *auditory* context);
- e) Providing the last word of incomplete sentences, given the word's first sound;
- f) Predicting the final word of incomplete written sentences (this is known as using *written* context);
- g) Predicting the final word of incomplete written sentences, given the word's first letter (or consonant blend).
  - EG: "The train climbed the h \_ \_."

### 36. Listening Previewing

This very simple intervention improves reading fluency by providing a model of accurate, fluent reading prior to the student's own oral reading (Rose and Sherry, 1984). It has been found to be superior to silent reading previewing (i.e., the student reads the passage silently before reading it aloud).

In Listening Previewing, the student simply follows along silently in his/her copy of the text as the teacher reads the text aloud. This strategy has been found to be effective even if the teacher reads only part of a lengthy passage (e.g., first 100 words) aloud while student follows along silently; then student reads from the 101<sup>st</sup> word forward.

### 37. End of Lesson Drill

This strategy (Jenkins & Larson, 1979) is an alternative to "word supply" (teacher stops student during oral reading to supply the student with the correct word, which the student then repeats) and "sounding out" (teacher provides the word the student has missed by sounding out the word's elements, then sounding out the word in unison with the student, then having the student sound out the word alone), which have little effect on reading fluency.

- a) During oral reading, the teacher supplies the words that the student misses, without stopping the student to repeat the word supplied by the teacher;
- b) At the end of the reading, the student practices missed words to a criterion of 2 consecutive correct readings

### 38. Repeated Readings

This simple strategy (Samuels, 1979) is based on the notion that repeated practice results in the attainment of "automaticity" of reading, such that short-term memory capacity is freed from the task of word identification to address reading comprehension needs. Passages should be read orally no more than 3 times (after 3 readings, "diminishing returns" occur).

### 39. Think Aloud

Ward and Traweek (1993) devised this strategy as an alternative to typical reading comprehension activities, which involve asking a series of questions following the completion of a reading passage.

- a) Modify a reading passage (either at the student's skill level, or at the level of student's grade placement, depending on objective), leaving out every 5<sup>th</sup> word ("cloze" technique).
- b) As the student reads the passage aloud, s/he tells the word omitted, and explains the reasons for his/her answer.
- c) The student answers a series of comprehension questions after reading.

### 40. Story Mapping

This strategy (Singer & Donlan, 1982) is designed for middle and secondary school students. It teaches the predictable elements of narrative or expository text, and strategies for identifying them while reading.

More specifically, students learn to ask themselves a series of generic questions associated with major text elements, and to generate related story-specific questions.

- a) Teach students to ask the following questions by introducing each of them one at a time in sequential lessons (vs. answering questions posed by the teacher):
  - "Who is the leading character?" [character]
  - "What is the leading character trying to accomplish?" [goal]
  - "What obstacles does the character encounter enroute to a goal?" [obstacles]
  - "Does the character reach the goal?" [outcome]
  - "Why did the author write the story? What does the author want to show us about life?" [theme]
- b) Provide an audiotaped version of the story, and a paper copy of the story for student to use to follow along while listening. Start the audiotape;

- c) Interrupt the story once; ask student to write 3 questions they want to answer when the story continues;
- d) At the end of the story, students should write any additional questions that arose while they were listening to the story.

For *younger students* (Short & Ryan, 1984), the questions (but not the meaning of the elements themselves) can be taught as follows:

- a) "Who is the main character?"
- b) "Where and when did the story take place?"
- c) "What did the main character do?"
- d) "How did the story end?"
- e) "How did the main character feel?"

## 41. Pictorial Story Maps

Pictorial Story Maps (Idol, 1987) are used to help students identify the 5 major elements in a story -- setting, problem, goal, action, and outcome.

- a) Display a set of comprehension questions
  - Where did this story take place? [setting: place]
  - When did this story take place? [setting: time]
  - Who were the main characters in the story? [setting: characters]
  - Were there any other important characters in the story? Who? [setting: characters]
  - What was the problem in the story? [problem]
  - How did \_\_ try to solve the problem? [goal; action]
  - Was it hard to solve the problem? Explain [action]
  - Was the problem solved? Explain. [outcome]
  - What did you learn from reading the story? Explain.
  - Can you think of a different ending?
- b) Student reads story silently
- c) With the teacher, the student completes the story map -- a drawing of 5 boxes, labeled Setting (characters, time, place), Problem, Goal, Action, and Outcome ("Modeling the Use of Story Mapping");
- d) Student reads another story, completing the map independently—while reading, or after reading, as student prefers;
- e) Teacher leads a discussion of the completion of the model map, using the student's input from his/her completed map; the student makes corrections on his/her own maps if needed ("Checking Student Use of Story-Mapping");
- f) The student reads another story, completing the map independently ("Independent Use of Story Mapping");
- g) The teacher administers the comprehension questions ("Questions used to frame story map").

## Writing

### 42. Writing Webs

This strategy (Zipprich, 1995) is similar to the Pictorial Story Map strategy. It is a planning tool that identifies components of a story before the student begins writing.

- a) Use the story-map tool (see above) to portray the elements of a story to be written (e.g., title, characters, etc.);

- b) Display the pre-structured story web (a graphic showing a box in the center labeled "title," surrounded by boxes labeled "setting, problem-goal, action, and outcome" and explain;
- c) The teacher leads a brainstorming session to complete the model web;
- d) The teacher shows a picture prompt for a story to be written by the student; the student completes his/her own writing web;
- e) The teacher leads a discussion to complete the model web, using ideas furnished by the student from his/her own web;
- f) The student writes his/her own story for the same prompt, using either the "improved" model web or his/her own ideas;
- g) The teacher shows a new picture prompt; the student completes his/her own web.

### 43. Writing Revisions by Monitoring Comprehension

Beal, Garrod, and Bonitatibus (1990) devised a self-questioning text-evaluation strategy to notice and repair textual problems in written compositions. This strategy is appropriate for use with older elementary students

Materials:

- For each student, cards or a paper listing revision questions;
- Sets of 15 stories; one set for each student. For each story, a "clear" version and a "problematic" version should be created, typed in large fonts, double-spaced, with wide margins, on individual sheets of paper:
  - The "clear" versions should not present any obvious comprehension problems
  - For 11 of the 15 stories, remove a key sentence so it is not clear what happened in the story, or how the problem in the story was resolved ("missing-sentence stories")
  - For the remaining 4 stories, include contradictory information; for example, include a sentence or phrase that conflicts with prior statements ("contradictory" stories)

Suggested scoring criteria:

- "Problem Detection Rate:" Sum # of detected missing-sentence story problems and # of detected contradictory story problems
  - "Revision Rating:" Rate revision of target problem as adequate or inadequate for each story
  - "Problem Detection and Revision Rating:" Sum # of target problems that are detected and revised adequately
  - If intervention is used with a group of 5 or more students, obtain group average for any of the above measures
- a) Using missing-sentence stories (one at a time), provide students with printed copy and have them follow along as teacher reads aloud;
  - b) Explain that the story is difficult to understand, and the students will learn a way to find parts of the story that aren't clear;
  - c) Give each student card with list of the following "revision questions:"
    - Who are the people in the story, and what are they like?
    - What is happening in the story?
    - Why are the people doing what they do?
    - Where does the story take place?
    - When does the story take place?
  - d) Review the revision questions with the students, and model the process of detecting problems in stories—i.e., answering the revision questions will help them find the target problem;
  - e) Present a second story; model the process again;

- f) For the third story, students should ask and answer the questions, and identify the target problem, themselves. Optionally, students can be directed to write the answers to the revision questions (and the target problem) on the card or sheet of paper
- g) Have students practice independently with another 3 stories. If most students do not successfully identify the target problem on the sixth story, model the process again with a seventh story;
- h) In subsequent sessions, administer remaining 4 "missing-sentence" stories, followed by the 4 "contradictory" stories
- i) Students should then generalize the strategy by using it to identify problems in compositions they have written

## Miscellaneous Academic Intervention Strategies

### 44. Interspersing Known and Unknown Material

Shapiro (1996) describes two instructional techniques that are based on the finding that learning is most efficient when no more than 30% of the material presented is unknown by the student (e.g., 3 of every 10 reading vocabulary words). Students find the activity motivating, since the student is working with more "known" than "unknown" material, making response momentum easier to maintain. These techniques are most effective when used to help students acquire new, fact-based information (letter recognition, word recognition, math facts, events in history, chemical formulas).

#### *"Folding-In" Technique*

- a) Identify known and unknown facts (words in a reading passage; multiplication facts; etc.) by administering a pre-test. (If the pre-test reveals a rate of "unknowns" greater than 50%, choose easier material.)
- b) Create a set of cards of "known" facts, and a set of cards of "unknown" facts drawn from the pretest material.
- c) The student selects 7 cards from the set of "known" facts, and 3 cards from the set of "unknown" facts.
- d) The teacher (can be a peer) presents the first unknown fact to the student. It is presented with correct pronunciation, solution, etc. The student writes the first unknown fact on a piece of paper, repeats it aloud 3 times, and turns the paper over.
- e) The teacher then presents a known fact, followed by the first unknown fact, the first known fact, and another known fact. This sequence continues until all 7 known facts have been presented and folded in with the first unknown fact.
- f) Next, the set of 8 facts (1 unknown; 7 known) is shuffled. Then, the second unknown fact is presented and folded in among the other 8 facts. This procedure is repeated again for the third unknown fact.
- g) If the student hesitates or gives an incorrect answer for any fact, the teacher has the student write the correct solution 3 times, and that fact is presented again.
- h) When all facts have been folded in, the entire group of 10 facts is presented 3 times. Each time, the set of cards is shuffled so the student doesn't simply learn a sequence of responses.
- i) The student takes a test covering all 10 facts. A mark is placed on each unknown-fact card if the student gives the correct response. When an unknown fact attains 3 consecutive marks, it is considered a "known" fact.

#### *Drill Sandwich Technique* (Coulter & Coulter, 1991, in Shapiro, 1996)

- a) Select 3 unknown and 7 known fact cards; place the unknown-fact cards in the 3<sup>rd</sup>, 6<sup>th</sup>, and 8<sup>th</sup> position in the stack.

- b) Present the entire set of 10 words (5 times per pack per session); re-shuffling known words into different positions each time. Use a corrective procedure if student gives an incorrect response.

#### 45. Adding and Interspersing Brief Tasks

Logan and Skinner (1998) describe an intervention that can be used during independent work periods to increase item response rates and improve motivation:

On a worksheet of items assigned for practice, (e.g., 25 math problems: 1 digit X 4 digit), follow every third item with a simple item that the student can solve easily (e.g., to the 25 problems reflecting the skill currently being practiced, add 9 simple problems: 1 digit + 1 digit addition problems).

#### 46. Direct Instruction Techniques

Although Direct Instruction (Englemann & Carnine, 1982) is a comprehensive instructional program featuring a highly structured curriculum and classroom procedures, a number of its techniques can be used for interventions with under-achieving and mildly disabled students. These techniques are designed to increase students' levels of academic responding. Direct Instruction methods have been shown to result in outcomes that are more favorable than those associated with other forms of instruction. A good summary of Direct Instruction appears in Carnine, Granzin, and Becker (1988). Following are some Direct Instruction techniques:

- Response Cards: During group discussions and question-and-answer periods, students write their answers on an erasable board or laminated cards and hold them up for the teacher to see. This practice replaces that of students raising their hands to answer questions, which penalized students who are slower to respond (and prevented them from experiencing a "complete learning trial" of stimulus-response-feedback.
  - Also addresses the problem of too-brief "wait times" without slowing the pace of instruction. Typically, teachers wait only about 1 second between asking a question and calling on a student for the answer.
- Choral responding: Teacher presents question or a series of questions (or items, such as math fact problems on flashcards), and students respond in unison. A rapid pace of questioning-responding is maintained.
- Reducing allocated time; Timing: Instead of giving students 20 minutes to complete an assignment, give students 10 minutes, and instruct them to mark the problem they were working on when signaled to do so at 1-minute intervals. Research indicates that a more rapid pace is associated with greater rates of accuracy and problem completion.

#### 47. Card Games for Math Practice: Tens and Baroness

These games (Usnick, 1991) can be used by students working independently to practice math facts.

*Tens*

- Materials: Standard deck of playing cards numbered from 1 (ace = 1) to 10; Card values are equivalent to the value shown on the card. Include face cards, or replace face cards with cards showing geometric designs—circle, square, etc.
- Object: Discard entire deck, leaving only the 4 tens.
- Layout: Deal 9 cards face-up in a 3x3 array (3 rows; 3 cards in each row). The rest of the deck is kept as stock, and placed face down.



- Play: Remove pairs of cards whose sum is 10 (e.g., 7 and 3), or pairs of face cards of the same rank (e.g., 2 jacks, or 2 circles). Fill empty spaces by dealing face-up from the deck. When a 10 is dealt, it blocks further play in that space.  
Sample game: After shuffling the deck, 9 cards are dealt face-up as in Fig. 1. The circle cannot be removed until another circle appears. The 10 in the bottom row blocks any plays in that position for the entire game. The 9 may be paired with either of the 1s in the top row ( $9 + 1 = 10$ ). The next deal will place cards face-up in both the upper right and lower left corners.

#### *Baroness*

- Materials: Standard deck of playing cards; cards equal to their number value; jack = 11; queen = 12; and king = 13. If using cards with geometric designs (as above), replace them with cards showing number values.
- Object: Discard the entire deck.
- Layout: Deal a row of 5 cards face-up. The rest of the deck is the stock, and is kept face-down.
- Play: Discard any card numbered 13, or pairs that total 13. When 2 cards totaling 13 are removed, they must be taken from different columns. Deal (starting at extreme left) 5 more cards face-up onto the first 5 cards, and/or into spaces left by removals. Discard and re-deal as before. Continue in this manner until the entire deck has been dealt by rows of 5, leaving 2 cards that may be placed to the side and are both available for play. Each new row of 5 buries the cards previously dealt; however, new deals should be placed so buried cards are still visible. Buried cards are unavailable for play until they are released through removal of the overlapping cards.
- Sample game: After shuffling the deck, 5 cards are dealt face-up. The 3 may be paired with the 10 and removed. No other pairs can be made, so five more cards are dealt face-up, beginning at the extreme left and filling in gaps when they are reached. In Fig. 4, the sequence of the second deal is 4, 1, 8, 12, 11. At this point in the play, the 8 is available, but the 5 is not. The combination must wait until the 12 is removed which will bring the 5 back into play. The 12 and 1 may be removed (since  $12 + 1 = 13$ ), followed by the 8 and 5. The resulting tableau would be 4, 11, gap, 11 overlapping a 6. Play continues by dealing 5 more cards.

## Social-Emotional Behavior

### 48. Precision Requests

Principle: Assertive presentation of requests with minimal verbalization and immediate consequences. This intervention was described by Rhode, Jenson, and Reavis (1996).

1. Explain request procedure and its consequences to the whole class before procedure is started. (Decide on a negative consequence for non-compliance ahead of time)
2. Make a "please" request in a nonquestion format, up close, with eye contact.
3. Wait 5-10 seconds. Do not interact with the student further.
4. If student begins to comply, reinforce verbally.
5. If student does not comply, give second request, using the word "need" (e.g., "Now I need you to get your materials out and start working.")
6. If student starts to comply, reinforce verbally.
7. If student does not comply, implement preplanned consequence.
8. After consequence, repeat request using "need." If student complies, reinforce; if not, use next consequence from hierarchy.

## 49. Differential Reinforcement

The behavior management literature describes a number of differential reinforcement strategies, in which positive reinforcement is provided for behaviors other than the targeted misbehavior. In general its purpose is to weaken undesired behavior by strengthening an alternative behavior.

*Variations:*

- a) **Differential Reinforcement of Incompatible Behavior (DRI)**  
Reinforcement of a behavior incompatible with the targeted misbehavior (e.g., reinforcing occurrence of being "in-seat" when targeted problem behavior is "out-of-seat").
- b) **Differential Reinforcement of Alternative Behavior (DRA)**  
Reinforcement of an appropriate "alternative" behavior (e.g., putting out "help" card instead of talking out without being called on).
- c) **Differential Reinforcement of the Omission of Behavior (DRO)**  
Reinforcement following intervals in which the targeted problem behavior does not occur (e.g., token following 30 min. without crying) -- does not specify what behavior should be performed instead.
- Don't use with behaviors that occur very frequently and will therefore have to be reinforced very frequently (e.g., out of seat every 2 minutes).
- d) **Differential Reinforcement of Low Rates of Behavior (DRL)**
- Reinforcement for displaying fewer than a specified number of targeted behaviors within a specified time interval (e.g., token for crying fewer than 5 times during the school day).
  - Especially effective for behaviors that occur very frequently (e.g., talking out in class without being called on).
  - Similar to procedure using "quotas" -- Student has # of "allowed" occurrences of behavior; when behavior displayed, quota reduced by 1. (e.g., for younger students, tokens or tickets that are "given up" when target problem behavior displayed; for older students, quota # recorded on card -- 4,3,2,1 -- and highest number crossed out when behavior occurs).

## 50. Rainbow Club

This classwide intervention (Wright, 1999) can influence the behavior of all students, while also addressing the specific behavioral needs of one or two. It involves cueing appropriate behavior through the display of a visual cue, coupled with reinforcement for satisfactory performance.

The teacher prepares enough cards for the each student in the class to collect an entire set of 6-8 cards, each displaying a different color of a 6-8 color rainbow. Students begin the week with one color card (e.g., red), and work to obtain additional cards during the week by displaying behaviors specified in advance by the teacher (e.g., completing work, good listening, following directions). The teacher walks around the room carrying a "rainbow," which s/he holds up periodically as a prompt for appropriate behavior. Students who are engaging in the behavior then "move up" one color of the rainbow. (Individual cards can be replaced by a chart posted on the wall, showing different colors of the rainbow.) Periodically during the day (during brief "free time" or "independent work" periods), students engage in a "reward" activity corresponding to the level of rainbow colors they have attained. For example, one student might have attained a green card, enabling him to play chess or computer games, while another may have only attained the orange card, entitling her to choose from free reading, notebook organizing, drawing at your seat, head start on homework, board games, flashcard reviews in pairs, or work on art project.

The teacher can inform students that "nagging" (asking the teacher to notice their behavior, or asking for a card) will keep them from earning a color card. Visual prompts (cartoon drawings of desired behaviors) can be posted for the entire class, or on the desks of students working on specific behaviors. Your goal is to be able to use the color cards as nonverbal cues that signify a whole range of expected behaviors you are looking for, and to have all or nearly all students at Blue or Violet by the last free-time session of the week. Even your best behaving, most rule-following students should be striving to attain Violet.

#### Sample: Free Time Eligibility

1. Red: Free reading, notebook organizing, drawing at your seat, head start on homework
2. Orange: All of Red, plus: board games, flashcard reviews in pairs, work on art project.
3. Yellow: All of Red and Orange, plus: checkers, mosaic work, feed animals, make a bulletin board design
4. Green: All of Red, Orange, Yellow, plus: chess, computer games
5. Blue: All of Red, Orange, Yellow, Green, plus: office aide time, run errands for teacher, permission to eat snacks
6. Violet: All of Red, Orange, Yellow, Green, plus: small group CD listening with headsets, dyad basketball (indoor trash can hoops), small group talking, lying on the floor

Special Friday: Blue or Violet may use materials or watch a movie in the back of the classroom

## 51. Lotteries

Rhode, Jenson, and Reavis (1996) describe a strategy for improving behavior on a classwide basis through the use of a lottery system. This system can be used for work habits and behavior, and for academic performance. To address behavioral concerns, the teacher writes behaviors (only a few) on tickets; when students display the desired behavior, they receive tickets for that behavior. Students write their names on the tickets, and place them in a box. For academic skills, teachers write small tasks or problems on a piece of paper. Students are free to take papers, solve the problem, write their name and the date on the back of the paper, and place it in the box. Papers with correct answers are eligible for the lottery drawing. At the end of a specified time period (morning and afternoon; daily; 2 - 3 times per week), tickets are drawn from the box; students whose tickets are drawn receive a reward.

- Disqualification: Adopt rule that any student sent to office or parent phone call will be disqualified from lottery. When tickets drawn, if name is on "ineligible" list, draw another name (don't say name aloud so all ineligible kids think it's them)
- Can also be used as "response cost" system -- tickets removed from student for misbehavior; remaining tickets go into lottery
- Auctions (can bid on prizes with "money" earned for appropriate behavior)

Variation for older students: When a student's lottery ticket is drawn, s/he goes to the front of the classroom to choose from a set of 4 - 6 numbered cups, each turned upside down, and concealing a slip of paper describing a reward (e.g., drink of water anytime; popcorn party for class; opportunity to be first out of the door at recess). The

number of the cup is announced, the slip of paper is removed, and the cup is returned to its upside down position in the set -- thereby creating the possibility that another student might choose a cup that was selected earlier by another student. If so, the student "loses" the potential reinforcer. (A slip of paper with the word "gong" or "sorry, try again" can be placed under one of the cups; if this cup is selected, the student loses out on the opportunity for a reward.) This introduces the element of "taking a chance" into the reinforcement system, making it more interesting and challenging for older students, and increases the likelihood that students will pay close attention when a peer is selecting a cup from the set.

## 52. Essential Aspects of Self-Monitoring

Self-monitoring is a form of self-management, a family of interventions in which students collect data about their own performance, deliver contingencies for such performance, guide their own work through self-instruction, and alter self-statements that have an impact on their psychological well-being and performance. Several important factors contribute to successful self-monitoring (Shapiro & Cole, 1994).

- a) Presence of cueing (indication that child should begin self-monitoring procedure) OR completion of a specific task prompts self-monitoring (e.g., when student is finished with a math worksheet, evaluate and correct answers; when student reaches a designated problem on the math worksheet, evaluate and correct answers). Sometimes, the occurrence of the behavior itself serves as the cue for self-monitoring (e.g., when student raises her hand to respond in class, she should record a hash mark on her self-monitoring tally sheet). In many cases, visual or auditory prompts are used.
- b) Procedures
  - Using paper-and-pencil, or counting devices, the student can monitor a number of events or behaviors, including attention (on-task behavior); productivity (summary record of work completed - number of problems or items); accuracy of work; etc.
  - There are numerous sampling methods that can be used in a self-monitoring intervention, including frequency counts, momentary time-sampling, product inspection, summary ratings, and duration measurement.
  - To increase a student's awareness of his or her own behavior, the strategy's goal can be to attain a "match" between teacher's ratings and the student's self-ratings for a monitoring activity.
  - Students must be trained in the self-monitoring procedure as follows:
    1. Define behavior to be recorded
    2. Model defined behavior
    3. Ensure student understands behavior
    4. Observe student during self-monitoring procedure

A *self-monitoring checklist* can also be created to enable students to monitor and review their own performance as they complete each step of an academic problem-solving procedure.

- a) Student receives instructions on how to solve the problem
- b) The student learns a self-monitoring procedure developed from error analysis of baseline performance (checklists created so list of self-monitoring items reflects typical errors)

For example:

- I copied the problem correctly
  - I regrouped when I needed to (top # is bigger than bottom #)
  - I borrowed correctly (# crossed out is one bigger)
  - I subtracted all the #s
  - I subtracted correctly
- c) Place + or - on each checklist item. If a - is placed before any of the items, the student must rework the problem without erasing his/her original attempts
- d) Points are awarded for correct responses; additional points are awarded if all self-monitoring steps correctly recorded.

### 53. Classroom Rule Enforcement

Research on classwide interventions (Johnson, Stoner & Green, 1996) demonstrated that teachers participating in study of 3 interventions had the least amount of confidence in an intervention designed to actively teach students classroom rules. However, of the 3 interventions studied (use of class syllabus with individual student assessment; self-monitoring; active teaching of rules), the "rules" intervention led to the greatest improvements in student behavior. A method for teaching and enforcing rules on a classwide basis -- and for managing students who perform poorly under this method -- is described below. This method was described by Jenson (1996).

Teachers need to develop (preferably, with class discussion) a set of no more than 6 rules, which should be stated positively (what to do, rather than what not to do), refer to behaviors that are readily observable and measurable, and that are very specific. Generally, classroom rules should consist of a compliance rule, a preparation rule, a talking rule, an in-class behavior rule, an on-time rule, and a transition behavior rule.

Consequences for Rule Compliance/Violations

- 1) Consequences should be specified in advance, preferably via discussion/agreement with
- 2) **"What If You Do?"** List series of positive consequences on left side of chart, with **most positive** consequence at the top. These consequences will be earned by **entire class** if rules are followed.
  - e.g., 0 rules broken" class gets most positive consequence; 1 rule broken: class gets next most positive consequence; etc.
  - Generally, no positive consequence should be offered if there are more than 4 rule-breaking events each day (so only 4 positive consequences needed)

Mystery Motivator: Set goal for class and list in box at bottom left of chart (e.g., If no more than 1 rule broken): Students learn what reward is when it is uncovered or a description of it is removed from a sealed envelope that has been posted in the front of the classroom.

- 3) **"What If You Don't?"** List series of reductive (mild negative) consequences on the right side of the chart, with **least severe** at the top (e.g., Warning; name in discipline book; having to wait 30 sec. after bell rings to leave class; having 10 min. taken from recess. These consequences applied to *individual students* who break the rules

- 4) List severe consequence in "crisis" box (Removal from class for in-school suspension until parent conference held). Covers extreme infractions such as weapons/controlled substances; attacking teacher.
- 5) For individual students who regularly break rules regardless of the consequences, establish a Rules Self-Monitoring procedure
  - Announce: If any one student breaks too many (3) rules in one day, that student will be taken off the class "What If?" Chart and placed on a self-monitoring program
  - Tape self-monitoring chart to desk. On left, list **rules student will work on (e.g., talking out; keeping hands to self; etc.**
  - Student circles # on chart indicating how well s/he judges him/herself to be doing for specified portion of the day (e.g., morning, afternoon)
  - Teacher gives feedback on self-ratings. One diagonal slash across marked circle if agree with student rating; X if disagree. Feedback given twice daily.
  - When student earns a specified # of ratings of 3 or above with teacher agreement, then student returns to "What If?" Chart with rest of class.

## 54. Team Basketball Competition

This classwide intervention (Wright, 1999) requires students to be divided into 4 - 8 person teams (at work tables, during group projects, etc.). Each team has a small box or bucket to hold the small balls given by the teacher when any one member of a team is engaging in an appropriate or specified behavior. At the beginning of the period, the teacher announces that the "basketball quarter is beginning," and states the rules or behavioral expectations for that period. As s/he circulates around the room, the teacher stops at tables, where s/he whispers the name of the student whose behavior will earn a ball. Teammates recognize the winning member by saying "good job, Sue;" after they have done so, the teacher places the ball in the team's basket. Teachers should distribute balls frequently to maintain a competitive and motivating atmosphere.

At the end of the "basketball quarter," each team counts the balls in their baskets; the 2 teams with the greatest number of balls send a representative to the front of the room for a "free throw playoff competition." Team representatives then take turns to make baskets by tossing balls (or other object) into a trashcan "basket." Typically, no additional reward is needed.

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