Incremental Rehearsal

Common Reason for Academic Failure: They have not spent enough time doing it.

Brief Description: A student is presented with flashcards containing unknown items added in to a group of known items. Presenting known information along with unknown allows for high rates of success and can increase retention of the newly learned items, behavioral momentum and resulting time on task. Research shows that this technique can be used with sight/vocabulary words, simple math facts, letter names, and survival words/ signs. In addition, this technique could be used for other facts, such as state capitals or the meanings of prefixes or suffixes, etc.

Procedures:

1. Introduce a series of words or math facts on instructional level.
2. From these, identify at least 9 words or math facts that the child can read or answer correctly within 2 seconds. These are "knowns" and go into a stack.
3. Also, identify 10 words of math facts that the child cannot read or answer correctly within 2 seconds. These are "unknowns" and go into a different stack. 4. Take 9 cards from the known stack and 1 from the unknown stack.
5. Present the first unknown card and have the student attempt to read or answer aloud. If incorrect (as expected), provide the correct answer.
6. Present the first known and have the child read or answer aloud.
7. Present the original unknown from step 5 and again have the child attempt to read or answer it aloud.
   a. If the child reads or answers the unknown correctly, it now becomes known. Begin the procedure again at number 4 using a different unknown.
   b. If the child answers incorrectly, then continue the process by presenting two knowns before requesting that the child reattempt the unknown. The next step would be the unknown with three knowns, then the unknown with four knowns and so on.
8. Repeat until all unknowns become knowns.

Critical Components:

- There must be a clear understanding of the student's skill level. (Does the student have the skills necessary to use the flashcards?)
- Student is presented with material on a 90% known to 10% unknown ratio during trials. This ratio helps to produce *behavioral momentum,* which occurs when high rates of initial reinforcement 'get the ball rolling' so that when the student is presented with challenging material they are more likely to persevere. Allowing the student to produce high rates of success increases motivation to work through material that is unknown.
- Student is provided with the answer to unknown material during trials. The manner in which this is done can be customized to the student's needs.

Critical Assumptions/ Problem Solving Questions to be Asked:

- It assumes that the child has acquired the skill and needs to use the skill more quickly. If the child has not yet acquired the skill, then more remedial instruction will be required.

Materials:

- Instructional Materials, including words or math facts that the child is expected to know
- Flashcards with subject content

References: This intervention has a substantial literature base supporting its effectiveness for enhancing fluency.

Burns, M.K. (2005). Using incremental rehearsal to increase fluency of single-digit multiplication facts with children identified as learning disabled in mathematics computation. *Education and Treatment of Children, 28,* 237-249.

Joseph, L.M. (2006). Incremental rehearsal: A flashcard drill technique for increasing retention of reading words. *The Reading Teacher, 59,* 803-807.

Tucker, J.A. (1989). *Basic flashcard technique when vocabulary is the goal.* Unpublished teaching materials. University of Tennessee at Chattanooga. Chattanooga, TN: Author.

Incremental Rehearsal Supplements

Flashcard Sequence (adapted from Burns 2005). first unknown, known first unknown, known, known first unknown, known, known, known first unknown, known, known, known, known first unknown, known, known, known, known, known first unknown, known, known, known, known, known, known first unknown, known, known, known, known, known, known, known first unknown, known, known, known, known, known, known, known, known first unknown, known, known, known, known, known, known, known, known, known, known, known

Note – Continue process till the unknown is answered correctly and then it becomes a known, and a second unknown is selected and the process is repeated second unknown, known second unknown, known, known second unknown, known, known, known second unknown, known, known, known, known second unknown, known, known, known, known, known, known second unknown, known, known, known, known, known, known, known second unknown, known, known, known, known, known, known, known, known second unknown, known, known, known, known, known, known, known, known, known second unknown, known, known, known, known, known, known, known, known, known, known

Note – Continue with third, fourth and all subsequent unknowns.