

Mnemonic Strategies: Success for the Young-Adult Learner

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ABSTRACT

Being able to remember new and unfamiliar material is very important for the success of a young adult learner. As these individuals move through high school and beyond larger amounts of new information are transferred to them and the types of content presented are often more complex. Mnemonic strategies have been proven to help individuals recall information by making it easier to remember, more meaningful, and more concrete. Mnemonic strategies are an effective study tool which can be utilized with all students and applied to an array of content areas. This manuscript will present a variety of mnemonic strategies that can be very useful when working with young adult learners in improving their vocabulary knowledge.

INTRODUCTION

Mnemonic instruction is a way to help students remember information/vocabulary more effectively and easily. It involves linking unfamiliar to be learned information with familiar already known information through the use of a visual picture or letter/word combinations. The use of mnemonics instruction with young adults at the secondary level had been of particular interest as secondary-school students, specifically those with disabilities, are particularly at risk in academic settings. (Wolgemuth, Cobb, & Alwell, 2008). “Mnemonics are effective when they speed up learning, reduce confusion among similar items, and enhance long-term retention and application of the information.” (Shmidman, & Ehri, 2010, pg. 160).

The keyword method is a mnemonic (memory-enhancing) technique used to increase the initial learning and retention of facts and fact systems which young adults often encounter in schools. This method incorporates both auditory and visual cues to enhance meaningfulness of the information to be learned and to promote strong associations between questions and answers (Mastropieri, 1988). The keyword, pegword, and reconstructive elaboration mnemonic strategies have proven effective across many studies and have shown effective for middle school and high school age students with learning disabilities (Wolgemuth, Cobb, & Alwell, 2008). In addition, “mnemonic devices, such as acrostics, acronyms, narratives, and rhymes, can assist in making abstract material and concepts more meaningful for individuals” (Laing, 2010, 349).

RESEARCH HISTORY OF MNEMONIC STRATEGIES

Mnemonic strategies are systematic procedures for enhancing the memory and making information more meaningful. Their particular use is in developing better ways to encode information so that it will be much easier to retrieve and remember the information. Although there many different retrieval strategies that can be implemented to attempt to retrieve forgotten information, research has demonstrated that the way information is initially encoded facilitates memory and the recall of this information better. The

fundamental aspect in developing mnemonic strategies is to find a way to relate new information to information that is already in the long-term memory of students. If this connection can be made, the memory of this information has the potential of being remembered for a very long time.

Mnemonics instruction with school age students is commonly implemented as an instructional strategy for teaching word recognition and vocabulary. The effectiveness of the use of these strategies is well documented. Research shows that students, including secondary and college level, remember 2 to 3 times as much factual information, maintain information over delayed recall periods, and enjoy using them. Other research findings “provide evidence that instruction involving the use of mnemonic devices does enhance a student’s formal reasoning skills and that this has the potential for application of knowledge to more varied tasks” (Laing, 2010, p.354). In addition, “the use of mnemonics with college age students might have enough potential for making learning easier and possibly more fun” (Higbee, 1994, p. 11).

It may also be helpful to mention what mnemonic strategies are not. Mnemonic strategies do not represent a "philosophy" of education. Mnemonic strategies should be implemented for only one reason: to help people remember to-be-learned information. Mnemonic strategies are also not an overall teaching method or curricular approach. The focus of mnemonic strategies is so specific that they are intended to be implemented to enhance the recall of the components of any lesson for which memory is needed. These strategies are also not comprehension strategies, but strategies to aid the recall of new information. It should be noted that students who are trained mnemonically also perform better on comprehension tests of that specific content (e.g., Mastropieri, Scruggs, & Fulk, 1990; Scruggs, Mastropieri, McLoone, Levin, & Morrison, 1987), but that is generally because the implementation of the mnemonic strategies helps them remember more information that can be applied on comprehension tests. Finally, it should be emphasized that mnemonic strategies are the “cure all” for success in school. There are many different things that students need to do to be successful in a school environment. The ability to remember content specific information is only one part of the entire process. The good news is when there is academic content that needs to be remembered, mnemonic strategies could be an important instructional component that teachers could implement. In the remainder of this article we will discuss the process of how to implement specific mnemonic strategies as well as some very specific examples for each.

MNEMONIC STRATEGIES

Acrostics

Acrostics are a sentence that is developed to help the person retrieve letters. These letters then represent something that the person needs to remember. The sentence is a (catchy) way to make the information more meaningful and easier to remember. For example:

Every Good Boy Deserves Fudge

This example helps an individual remember the lines of the treble clef (e, g, b, d, and f). Another example of the use of acrostics is:

My Very Educated Mother Just Served Us Nine Pizzas

This particular example helps the person remember the order of the planets of the solar system (Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune, and Pluto). It must be noted that

students must first know the vocabulary for the strategy to be effective. For example, if a student does not already know the names of the planets, the acrostic will be of no help to them in remembering their order.

This strategy above, acrostics, is effective for instruction of concepts on a more difficult level. For example, high school or college students taking a statistics course may be asked to “identify the assumptions that underlie the statistical techniques that they use” (Hunt, 2010, pg. 174). They might employ NICE to assist them in recalling:

“**N**ormal
Independent
Constant variance **E**rrors” (Hunt, 2010, pg.174).

Acronyms

Another popular form of mnemonics is the use of acronyms. Acronyms are words that are developed from the first letter of words that are to be remembered. The following examples demonstrate use of acronyms:

To remember the Great Lakes the acronym HOMES could be used:

Huron
Ontario
Michigan
Erie
Superior

Another example would be the use of the acronym ROY G BIV to remember the colors of a rainbow:

Red
Orange
Yellow
Green
Blue
Indigo
Violet

It must be noted that students must first know the vocabulary for the strategy to be effective. The same can be said for the young-adult learner. If a student does not already know the names of the Great Lakes, the acronym will be of no help to them when recalling the information. Also, students need to be taught how to use the process. If they are not taught how to use the acronym to assist them in studying, they will not be able to recall the information. For example, it is very common for students to respond to the question, “What are the five Great Lakes?” with the answer HOMES. In this case, the student has not been instructed properly in linking the acronym to the information being recalled. The student recalls simply the acronym without understanding the content. The acronym cannot just be presented to the students or posted in the classroom. Students must be taught how to effectively use the acronym and practice using it so they can implement it independently.

Loci

Most studies indicate that the method of loci assists with memorization such as remembering a shopping list. The method of loci is also commonly called the mental walk. In basic terms, it is a method of memory enhancement which uses visualization to organize and recall information. Many memory contest champions claim to use this technique in order to recall faces, digits, and lists of words. “It has even proven its worth in on-the-spot tasks. In one study, a group of high-school students used the technique to accurately remember the contents of a complex lecture, by attaching keywords from the speaker's arguments to various locations in their mental map” (Robson, 2011, pg.2).

Keyword Method

The keyword method is a technique (form of mnemonics) commonly used to learn vocabulary words. It takes unfamiliar information and makes it more meaningful and concrete and thus, easier to remember. When developing a keyword strategy you should follow the 3 R's: reconstructing, relating, and retrieve (Mastropieri, 1988). The use of the 3R's is as follows:

- (1) *Reconstructing*: Coming up with a keyword. Something that is familiar to the student, easily pictured, and acoustically similar (sounds like the word to be learned);
- (2) *Relating*: Next, link the keyword with the definition of the new word in a picture; and
- (3) *Retrieve*: Lastly, teach the learner the process of how to effectively go through the steps to remember the new vocabulary word and meaning.

An example of the use of this strategy can be seen when teaching the word piggin and its meaning, bucket (Mastropieri, 1988). The word piggin means bucket.

Develop keyword-Pig—it is familiar to students, acoustically similar to piggin and can be easily pictured.

Develop a picture of a pig sitting in a bucket (or wearing a bucket) linking the keyword and the definition of the word.

Teach the process : “When I say what does piggin, first think of the keyword pig (piggin-pig), then what was happening with the pig, the pig was sitting in a bucket (or the pig was wearing a bucket), then the answer-bucket.”

It is very important to not forget to teach the students the process of how to remember and recall the needed information (Step 3). Just developing and showing students mnemonic pictures will not improve their recall of vocabulary knowledge.

Pegword Method

Pegwords can be used when numbered or ordered information needs to be remembered such as: One-bun; Two-shoe; Three-tree; Four-door; etc. Pegwords are substituted for the number to be remembered and associated with the other information (Scruggs, Mastropieri, Levin, & Gaffney, 1985). For instance, to remember that insects have six legs whereas spiders have eight legs, create a picture of insects on sticks and another picture of a spider on a gate. To remember Newton's first law of motion

(objects at a rest tend to remain at rest unless acted on by another force), create a picture of a bun (pegword for one) resting. A more complex concept such as understanding what objects constitute a third class lever such as a garden rake, one might create a picture of a rake leaning against a tree (pegword for three, or third).

Pegwords can also be combined with keywords. To teach that crocoite is a mineral that is number 2 on the Mohs hardness scale, create a picture of crocodiles (keyword for crocoite) wearing shoes (pegword for 2). To remember that the mineral wolframite is hardness number 4, black in color, and used in making filaments for lightbulbs, create a picture of a black wolf (keyword for wolframite), looking in a door (pegword for 4), and turning on a lightbulb.

Another example may be that the hardness level of talc is one. In this example the teacher would show a picture of a dog with a tail (keyword for talc) with a bun sitting on it (pegword for 1). The teacher then may ask, "What is the hardness level of talc? Well, first think of the keyword for talc, which is tail. Now think to the picture and what was on the tail—a bun. Now what number goes with bun? -one. The hardness level of talc is one." In another example the hardness level of calcite is three. In this example the teacher would show a picture of a cow (keyword for calcite) sitting in a tree (or next to a tree) (pegword for 3). For this example the teacher may ask, "What is the hardness level of calcite?" She may then state, "first think of the keyword for calcite, which is cow. Now think to the picture and where was the cow—in a tree (or next to a tree). Now what number goes with tree? -three. The hardness level of calcite is three."

Reconstructive Elaborations

Reconstructive elaborations are mnemonic strategies implemented when content area learning is presented. It involves students learning information taken from a content area textbook that they need to remember. There are four types of reconstructive elaborations: symbolic, mimetic, acoustic, and the first letter strategy (Mastropieri & Scruggs, 1989; Mastropieri, Scruggs, Whittaker, & Bakken, 1994; Scruggs, & Mastropieri, 1989). The definition and an example of each type of reconstructive elaboration is as follows:

- (1) *Symbolic*-The concept the student needs to know is an abstract concept, but familiar (1st US Policy) to the student. A symbol is used to represent something to help the student remember. Example: Uncle Sam representing the US and their stance in the war.
- (2) *Mimetic*-Student knows the word, but not meaning or the meaning is inaccurate. An example is trenches: Student is familiar with the word, but not meaning. Student is shown a picture of a trench with soldiers in it getting sick and dying.
- (3) *Acoustic*-The word to be learned is a totally unfamiliar word and the student does not know the definition (same as keyword). Since the information was specifically related to content area information a new term was developed (acoustic).
- (4) *First Letter*-A combination of Acronym and Key Word strategies. For example, imagine a picture of an Allied van on fire with a person saying FIRE! Teacher asks what are the Allied Powers? Student thinks of keyword-Allied Van. What is happening with the Allied Van? The van is on fire. What does FIRE stand for? France, Italy, Russia, and England. Those are your answers. Another example is imagining a picture of children playing TAG in Central Park. What are the Central Powers? Student thinks of the keyword-Central Park. What is happening in Central Park? Children are playing TAG. What does TAG stand for? Turkey, Austria-Hungary, and Germany. Those are your answers. Again, the picture and mnemonic methods alone will not be as beneficial to your students as

teaching them the process of remembering the pictures and how to retrieve the important to-be-learned information (Scruggs & Mastropieri, 1989).

Double Keyword Method

Sometimes there is related information that students need to know, but all the information is unfamiliar to them. In that case, a double keyword strategy might be implemented. This might be used when a person has to be able to go forwards or backwards to recall information (Mastropieri, Scruggs, Bakken, & Brigham, 1992). Remembering the states and their capitals would be an example where students might not know the name of a state or its capital. An example for recalling states and their capitals would be as follows: A teacher could ask “what is the capital of California? or, Sacramento is the capital of what state?” In this example, the student would need to be able to go in either direction to recall the needed information. An example of how this technique might be taught is as follows:

Teacher: The keyword for California is calf’s horn and the keyword for Sacramento is sack of mint.

Teacher Asks: What is the capital of California?

Teacher Instructs Students: First, think of the keyword for California (calf’s horn), then look at what is happening in the picture (a calf’s horn was stuck in a sack of mint), and finally your answer-Sacramento. The teacher could also go in the other direction by asking Sacramento is the capital of what state? In this case the student would first need to think of the keyword for Sacramento (sack of mint), then what was happening in the picture (a calf’s horn was stuck in a sack of mint), and finally your answer-California.

The following example demonstrates the teaching of the capital of Wisconsin (Madison):

Teacher: The keyword for Wisconsin is whisk broom and the keyword for Madison is maid.

Teacher Asks: What is the capital of Wisconsin?

Teacher Instructs Students: First, think of the keyword for Wisconsin (whisk broom), then look at what is happening in the picture (a maid was cleaning off a small table with a whisk broom), and finally your answer-Madison. The teacher could also go in the other direction by asking Madison is the capital of what state? In this case the student would first need to think of the keyword for Madison (maid), then what was happening in the picture (a maid was cleaning off a small table with a whisk broom), and finally your answer-Wisconsin. This is another method to help students with and without disabilities learn information.

Study Skills and the Young Adult Learner

Once information is identified where mnemonic strategies would be beneficial, the learner must evaluate the use of mnemonics as a means to support study skills. Students are encouraged to work with their teacher to develop strategies that can assist with learning the content. An effective way to assist young adult learners in the use of mnemonics is to implement a team approach in developing the best strategies for the learner. The saying two heads are better than one truly applies to developing mnemonic strategies. The more individuals involved in the process will help with developing more ideas. During

team meetings, brainstorming is an effective technique. This technique can be implemented so that there are many options to consider from many different people and each choice can be evaluated as to which might be the most effective. If there is not a good choice skip it and come back to it later. The young adult learner should be involved in the planning process and the team should look directly at the content that needs to be learned. Often, student participation will enhance the meaningfulness of mnemonics use.

CONCLUSION

A difficult task for many is to remember new, difficult or uninteresting material. This is a very common for young adult learners as they move through high school and beyond. Learners are required to learn more information and more complex content. Mnemonic strategies have been proven to help individuals remember information by making it easier to remember and more concrete. These strategies work with all kinds of students and it can be applied to any type of content. Although mnemonic strategies can be very beneficial, it is important to choose the incorrect method or it will not benefit the learner. Although every mnemonic strategy was not presented, this information should provide a starting point for assisting young adult learners in improving their vocabulary knowledge.

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