Symbol Mastery and the Retention of Dolch Spelling Words

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Abstract

While the majority of students are verbal, conceptual thinkers, some students have a different learning style. Three Dimensional Visual Thinkers (3DVT) think "with the mental picture of concepts and ideas" (Davis; 1994). "Symbol Mastery" is a process of creating a three dimensional visual picture definition of a word or concept in clay; including how it is actually spelled. This paper is based on a study into the effect of Symbol Mastery on students' learning and recall of common sight spelling words.

Introduction

In today's classrooms, there exists a wide variety of learning styles (Fleming, 2006). To meet these learning styles, many different strategies and teaching approaches are used. The subject of spelling, for example, has been taught in numerous ways, although they mostly have sound components to them (Topping, 1995; Treiman, 1992; Rycik, 2002; Meeks, 2003). Still, in many classrooms there appear to be some students who "just don't get it;" they do not meet with success no matter what approach is being used. These students are often diagnosed as being 'dyslexic' or as having learning difficulties. In fact, they may have a different learning style; that of being a 'Three Dimensional Visual Thinker'. Three Dimensional Visual Thinkers (3DVT) think "with mental *pictures* of concepts or ideas" (Davis, 1994,; p.9).

With the advent of new medical technology, researchers have been able to look at how the brain learns to spell. One of these new tools is the Positron Emission Tomography (PET) which measures emissions from radio actively labeled chemicals that have been injected into the bloodstream. This provides information that helps to create two- or three- dimensional images of where the chemicals go in the body. (Marshall, 2007). Burd (2002), using Positron Emission Tomography (PET), found a link between meaningful auditory information and visual codes, demonstrating that both are required for spelling accuracy; rather than only visually-learned stimuli (Nyberg, Habib, MacIntosh, & Tulring 2000; Wheeler, Petersen & Buckner 2000). Lehmann and Murray (2005) found "multi sensory encoded experiences enhance perception and facilitate the retrieval of memory" (p.179). These are skills required to become a successful speller.

If students are Three Dimensional Visual Thinkers, they could benefit from a different approach to learning to spell; one that does not rely on phonics and rules, but rather on the understanding of what a word means, how it is spelled and how it is said. Symbol Mastery is one such approach. It involves the learner's creative abilities; as they construct three-dimensional images of the definition of a word and how it is spelled. Mastering a word involves learning about its meaning and spelling, in a creative way that gives the student ownership and understanding of the word. As it is the student's interpretation of the definition, students tend to feel owndership of the definition (Davis, 1994). The spelling is owned, as it is shown with the letters they made. There are no phonics used; only letter names and visual representations. The word is owned when it is pronounced correctly by the student while looking at the clay letters. This links the definition and spelling together (Ibid).

Literature Review

Spelling.

Spelling is the ability to encode sounds into words. It is considered an important skill (Simmons, 2010) as well as an important part of everyday life. Spelling is an integral part of the process of learning to read and write. Graham, Morphy, Harris, Fink-Chorzempa, Saddler, Moran and Mason (2008) remark that "Mastering spelling is important to both reading and writing" (p 797). Katriz (2006) notes that efficient spelling recognition leads to students becoming better readers.

The ability to spell correctly allows people to share knowledge, information and ideas with others. Spelling is a process that encodes sounds into letters, which are then organized into an order that creates words. Gehry (1982) and Henderson (1984) define spelling as a way of representing sounds used in speech to reflect spoken language in a written way.

Three Dimensional Visual Thinkers.

Some children do not think primarily with sounds; rather they prefer visual ways of gaining information (Davis, 1994; Silverman, 1991). Davis (1994) labels these learners as being 'Three Dimensional Visual Thinkers' (3DVT). They are learners who think with the mental picture of concepts and ideas (Davis, 1994, p.98). A Three Dimensional Visual Thinker's style of thinking is reflected in the saying, 'a picture is worth a thousand words.' A person who thinks with visual images can 'see' complex concepts that would take many hundreds or thousands of words to describe (Ibid). Images created are complex, comprehensive and easily altered to accommodate new facts and information. As Davis (1994) stated, "Mental pictures are accurate in portraying the meanings of the words" (p. 99).

More and more, teachers are recognising different learning styles. Nevertheless, within the classroom setting much learning occurs through sound. Phonemic awareness is based on a student's ability to hear and recognize the phonemes in a word. A phoneme is the smallest part of a word (Hill, 2006). Students need to learn to match a letter to its sound. This is achieved through practice to increase word recognition using sound (Li, Shu, McBride-Chang, Lui & Xue 2009). However, if all instruction currently used in classrooms was effective, then there would be little or no need for remediation.

In their findings, Wanzek, Vaughn, Wexler, Swanson, Edmonds and Kim (2006) indicate that it is important for teachers to provide specially designed instruction and accommodation to meet the needs of students with learning disabilities. If parents do not feel that their child is experiencing success with the strategies being taught at school, they may look at some of the commercial tutoring services available to support their child's learning. This suggests that another approach within schools would be beneficial for poor spellers who are Three Dimensional Visual Thinkers (Davis, 1994; Ambrose & Cheong, 2011).

Dolch words.

'Sight words' are words that occur with high frequency in reading. Students are taught many sight words by memorizing the whole word by sight, rather than by sounding out (David, 1955). Sight words are also known as words from the 'Dolch Word List'; a list of frequently used words compiled by Edward Dolch in 1948. It is composed of 222 common English words, excluding nouns. Dolch (1927) advocated that the word must refer to its meaning; not its spelling. The word's meaning must be clearly understood. The spelling of the word is what the word looks like (Davis, 1994).

To show that a student knows how to spell a word, spelling tests are given. Spelling tests look at a student's ability to recall the spelling of a word, rather than its meaning. Some students are able to recall the correct spelling, if the words are presented in a consistent order. This demonstrates that the student has memorized the words in a given order, and if the order is changed, the words tend to be spelled incorrectly.

To this end, Davis (1994) developed the 'Symbol Mastery Spelling Steps' based on his belief that "creativity is the means by which real learning takes place" (p107). Using clay as the tool to express creativity, students are encouraged to create their own visual interpretations of a word's meaning. Once completed, students then connect the visual interpretation to the word's spelling and pronunciation. At the completion of this process the word has a meaning associated with it. This meets the same goal as advocated previously by Dolch.

Symbol Mastery

Davis (1994), Silverman (1991) and Warwick (2005) believe that creativity is an important component of learning. Davis (1994) proposes that the process of discovering what a word means, through creating an image of the meaning and the spelling of the word three dimensionally, is a workable pedagogical process. He called this process 'Symbol Mastery'. Symbol Mastery is a method of learning to spell that taps into a learner's creativity to help them learn and master the spelling of words (Ibid).

Symbol Mastery is creative and gives 'ownership' of what is being made to the creator. According to Davis (1994), this results in an understanding o what the word means and how it is spelled. Ambrose and Cheong (2011), in their studies of Symbol Mastery, observed that students who received Symbol Mastery instruction were able to spell words from their textbooks correctly. They concluded that this program could help improve the ability of dyslexic children to read and write and, by inference, spell, as well as increase their self-confidence. Amsberry, Mclaughlin, Derby, and Waco (2012) found in their studies of Symbol Mastery, that doing the process of Symbol Mastery was successful in helping children to learn to spell. Poole (2008) noted that the clay figures created in Symbol Mastery, "utilise a multisensory approach to give meaning to the look, sound -and spoken experience of the word" (p87). Ehri (cited in Roberts, 2003) concluded that, "It is apparent that anytime the abstractness of a Dolch sight word is taken to the concrete level with pictures and other mnemonic cues, that Dolch sight word acquisition improves" (p. 31).

Symbol mastery is a way for students to move the abstractness of a word to a more concrete level by creating both the word and its meaning in a three dimensional visual form, thus linking the two together. For spellers who understand and can apply the rules and exceptions for phonetically spelled words, this activity reinforces the learning process, while giving the sense of ownership and involvement. For those students who do not understand or learn through the phonetical spelling processes, there is an ownership developed of the word and its spelling. Further, the process allows these learners to use their imagination to create the visual image of the word's meaning. Purpel (1989) suggests that the development of creativity and imagination, which are vital in education, enables a person to understand, build, create and recreate their world.

To create the image of the definition of a word, the meaning needs to be explored. This is best done through its usage. It is important to make sure that the usage of the word reflects the definition being mastered. For example "it" is a word that we use frequently in conversation and writing, as well as see when reading. Yet if asked what its definition is, we would probably give an example of it being used. Very few would be able to give the dictionary definition – "the thing or animal that is being talked about" (Webster's New World Children's Dictionary, 1997).

In making the clay word model, a thing (object) or animal would be made. It would then be placed inside a speech bubble (to show that the thing or object is being talked about) and attached to someone or something's mouth (as the definition does not say who or what is speaking). The clay letters are added below the model. When a visual memory is created, it includes both the visual definition and the symbols that represent the definition in written form. These steps help to focus attention on what the word means. The end result is that the learner's understanding of the word is demonstrated in three dimensional form. If all parts of the definition are not included, then understanding is incomplete. Davis (1994) builds on the "active and dynamic way of knowing" (Kalantzis and Cope, cited in Healy, 2008, p. 88) in the development of the Symbol Mastery steps.

Kalantzis and Cope (2005) have proposed similar steps for the process of design thinking. Like Symbol Mastery, design thinking works toward incorporating creativity and exploring the meaning and usage of the word. Using creativity to learn something involves students at an intellectual level, as they need to understand what they are being asked to do. On a creative level, students create their interpretation of the task. According to Davis (1994) "the creative process and the learning process, if not identical, are so closely related that they are inseparable" (p. 65). Davis (1994) concludes that students would learn quicker and more thoroughly if they found the activities they were doing more interesting and entertaining (p.67).

Marshall (2005) suggests that the 'Visual Word Form Area', which is the area where the brain activates and completes the work of matching letter strings to known letter patterns, acts as "a storage bin for familiar words" (p. 1). As this area develops, the process changes to "become one of matching the sounds of whole words to their meaning, rather than sounding out letters or small word segments" (Marshall, 2005, p. 1). This process helps to link the way a word sounds, means and looks. Symbol Mastery does much the same. It is a "mental process for relating words to their sounds and meanings, which takes place in the brain after the Visual Word Form Area, has done its work" (Marshall, 2005, p. 5). This suggests that the meaning of the word is important to its successful recognition, rather than a collection of sounds strung together (Marshall, 2011; Davis 1994).

Andrews (1990) suggested that if a student has no phonological or phonemic awareness, then they need to rely on visual or whole word strategies. This prevents them from becoming independent readers and spellers, as they have limited access to new words. By using Symbol Mastery, a Three Dimensional Visual Thinker is bypassing the phonemic steps and creating a visual memory that has the definition and spelling included. When they spell the word, they use only the letter names, as they are always consistent in English. Treiman (1993) and Davis (1994) advocate that knowing the letter names can support the correct spelling of words.

Symbol mastery provides a process for mastering the language concept being learned. A side effect of this is learning to spell the word and representing the concept accurately. Johnson and Baumann (1984) stated, "if a student can recognize the printed word but does not know what he or she has read, then the problem lies in mastery of the language concept conveyed by the word"(p. 204).

Current Research

My research looked at the effectiveness of the Symbol Mastery process on learning and retaining the spelling of Dolch words. It involved a group of four, Three Dimensional Visual Thinkers. Each participant was given four Dolch words that their parents/teachers had indicated were difficult for them. Further, four Dolch words were selected by the researcher. These words were homonyms; words that sound the same but have different meanings. All eight words were given to each participant to learn, using the Symbol Master process.

Preliminary results indicate that both participants and their parents feel there has been an increase in self confidence and willingness to attempt to spell words. Even though not all the words were spelled correctly in the post-test, there were more correct than in the pre-test for three out of the four participants. In the pre-test, two participants were unwilling to attempt to spell a word. In the post-test, all participants were willing to spell the complete list. Where errors occurred, results showed either phonetical spelling or the inclusion of the correct letters, but in the wrong order.

Conclusion:

Spelling has been taught using a variety of strategies, many of which have not involved the learner actively through making use of their imagination and creativity as an aide to understanding the word and how it is spelled. Symbol Mastery may fill this gap for students who struggle to learn to spell using only sounds and written symbols for the word. Symbol Mastery is a hands-on, engaging way to learn both the meaning of the word and how it is spelled, with accuracy and certainty.

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