

A CRITICAL ASSESSMENT OF STEVEN AND SANDRA'S *DISCUSSION IS WHAT MAKES SEMANTIC MAPS WORK IN VOCABULARY INSTRUCTION*

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ABSTRACT

Steven A. Stahl and Sandra J. Vancil's "*Discussion is what makes semantic maps work in vocabulary instruction*" is one of the early articles studying semantic mapping in 1986. They select twelve target words, adopt three post-test measures(multiple choice, cloze test and sentence anomaly test), assign the three measures randomly to three groups of different treatments(Full Treatment Class, Discussion Only Class and Map Only Class) and claim that the Full treatment group and the Discussion Only treatment group are both higher in post-test scores than in the Map Only group, thus highlighting that discussion is what makes semantic maps work in vocabulary instruction. I clarify the concept of semantic mapping ,forms of activities that contribute to semantic maps work and its ultimate effect factor and argue that it is not discussion that makes semantic maps work in vocabulary instruction. I also examine the test groups they divide,the research method they use and the outcome they get and conclude that it lacks significant evidence and is highly problematic. Accordingly, I believe that Steven and Sandra's claim should not be accepted.

INTRODUCTION

Concerning the layout of Steven and Sandra's article, it consists of six major components, namely Introduction part, Semantic and word learning, Discussion and semantic mapping, Discussion brings results, Why discussion works and How to use vocabulary discussion, among which the former three parts are specifically assessed critically in this introduction part. At the very beginning comes the introduction part, where Steven A. Stahl and Sandra J. Vancil (1986) in this article quote his own words and claim that relatively little research has been conducted on the significance of discussion for vocabulary learning and that what has been done has yielded mixed findings. They also in this part choose a definition of semantic mapping related to classroom discussion among a number of definitions irrelevant to classroom discussion, that is, "semantic mapping is one technique of teaching word meanings which makes extensive use of classroom discussion in connection with a visual display"(Johnson and Pearson, 1984). Apparently they intend to establish a connection between semantic mapping and classroom discussion to back up their argument. However, this definition speaks to itself that classroom discussion is just one of the means that the technique of semantic mapping adopts but not what makes semantic maps work in vocabulary instruction.

In order to clarify the concept of semantic mapping more objectively I here make a list of some definitions other than the so-called "classroom discussion"one as follows. As a matter of fact, Johnson and Pearson's definition on semantic mapping in 1984 is not what is cited by Steven A. Stal and Sandra J. Vancil in this article. Johnson and Pearson(1984) define semantic mapping as a categorical structuring of information in graphic form and an individualized content approach in which students are demanded to relate new vocabulary to their own experiences and previous

knowledge. Dale D. Johnson, Susan D. Pittelman and Joan E. Heimlich (1986) assume semantic mapping is a diagram which assists discussion and aids students to see how concepts and opinions are connected with one another. From Dale D. Johnson, Susan D. Pittelman and Joan E. Heimlich's definition we see it is semantic mapping that assists discussion, which is completely contradictory to Steven and Sandra's definition that discussion is what makes semantic mapping work in vocabulary instruction.

In their second part, they illustrate semantic mapping by presenting an incomplete semantic mapping figure and prove that word learning process via semantic mapping way is more effective than a non-semantic mapping or a control treatment method by quoting Johnson, Toms-Bronowski, Pittelman(1982) and Johnson et al. (1984)'s finding that semantic mapping produce conspicuously higher vocabulary learning than a control treatment. From the perspective of a research paper it is quite superfluous to justify the effectiveness of semantic mapping at such large length because it doesn't contribute to the function of discussion and violates the idea the two author has to prove just as the topic shows. What we focus here is not compare semantic mapping with other vocabulary instruction activities but discussion is what makes semantic maps work in vocabulary instruction.

What brings the authors on the track is their third part Discussion and semantic mapping where they compare the relative significance of semantic mapping and the discussion and three classes or groups are tested in the form of post-tests with the same amount of time for vocabulary learning. Yet doubts or problems are detected immediately by readers with critical thinking. One is that the words chosen for post-tests are subjectively judged by the teachers, thus bringing about a possibility that some individuals engaged in discussion are familiar with the words and it is their knowledge storage rather than their discussion makes semantic maps work. Another problem is that students' performances are compared in groups not in individuals, from which how we can guarantee the outcome of a group is equivalent to the achievement of an individual and how we can make sure that the participant who takes the most initiative and contributes the most in a discussion group makes semantic maps work through discussion. The chances are that he or she may not benefit from the class discussion at all and what makes his or her semantic maps work is not discussion but his or her own cognitive level, which poses another challenge to Steven and Sandra's theory and hypotheses.

STEVEN AND SANDRA'S THEORY AND HYPOTHESES

Recapping the process of forming their theory, Steven and Sandra firstly find a definition suitable for discussion to fit in the introduction section, conduct a survey via post-tests taken by three classes or groups and bring out the research results by presenting and analyzing the results table of the post-tests. The whole process is logically smooth and seemingly reasonable. Hence the theory Steven and Sandra (1986) put forward is that semantic maps don't work alone and must be built in class during vocabulary discussion and just discussion works as well for most students. However, what Steven and Sandra assumes as a theory is actually what I consider to be a hypothesis owing to the fact that there exist some flaws and that it remains to be discussed and proved. Some flaws are spotted from this paper itself and some flaws are behind the scenes and are observed after searching for the truth of semantic mapping. As is known to all, it is a common sense that a definition determines the attributes of a concept. If one conceals the true definition or one is unable to acquire a real and proper definition, how can one justify the concept one intends

to prove? That is to say, suppose Steven and Sandra avoid the authentic definition of semantic mapping, their theory becomes ungrounded at the very beginning and it dooms to be a foetus dying in the womb. In addition to defects in definition the target words Steven and Sandra used to be tested in the post-tests are subjectively judged by teachers as has been mentioned above, which certainly weaken the accuracy of the experiment. Along with this the results of the anomaly test overthrow the two authors theory as well because those students of Semantic map only class perform better than those of the two classes involved with discussion as is shown in the figure 2. Some more leaks in results will be discussed in the next RESULTS part. Interestingly enough is that Steven and Sandra in their introduction part mentions that some other researches relating to the importance of discussion for vocabulary learning have yield mixed findings, through which we can glimpse that some of the research results do not contribute to the importance of discussion. More than that, Steven and Sandra also point out that relatively little research has been conducted on the significance of discussion for vocabulary learning, which implies that discussion is just a kind of activity among huge amounts of activities that can be used in vocabulary instruction together with semantic mapping activity because Dale D. Johnson, Susan D. Pittelman and Joan E. Heimlich(1986) in their article Semantic Mapping address semantic mapping is a good alternative to traditional activities used before besides being an effective strategy for the development of the vocabulary. Since semantic mapping and discussion are all activities, there is no denying that semantic maps are able to work alone and they need not be built in class during the discussion of the vocabulary, thus tripping down Steven and Sandra's theory that discussion is what makes semantic maps work in vocabulary instruction. In fact in Dale D. Johnson, Susan D. Pittelman and Joan E. Heimlich(1986)'s definition about semantic mapping that semantic mapping is a diagram which assists discussion and aids students to see how concepts and opinions are connected with one another serves as another evidence that discussion is not what makes semantic maps work in vocabulary instruction and ironically discussion is aided by semantic maps.

Behind the scenes lies one ultimate flaw observed after searching for the truth of semantic mapping. Looking back to the definitions apart from Steven and Sandra's, Johnson and Pearson's definition and Dale D. Johnson, Susan D. Pittelman and Joan E. Heimlich's definition can be concluded that semantic mapping is a graphic form or a diagram. Therefore, based on these two similar definition we can start the journey of making clear what makes semantic maps work in vocabulary instruction. To be exact, the definition of a concept gives us the answer that what makes a graphic form or a diagram work is just what makes semantic maps work in vocabulary instruction.

Jinwoo Kim, Jimwoo Kim, Jungpil Hahn and Hyoungmee Hahn(2000) claim in their article How Do We Understand a System with (So) Many Diagrams? Cognitive Integration Processes in Diagrammatic Reasoning that a diagram is an abstraction of a real system and typically concentrate on just one system perspective to strengthen understanding of that perspective. Chandrasekaran et al. (1995) says diagrammatic reasoning is the study of how people use diagrammatic representations in problem solving and reasoning and Larkin and Simon(1987) says the cognitive processes in diagrammatic reasoning are composed of perceptual and conceptual processes. They all lead us to a cognitive road of requesting what on earth makes semantic maps work in vocabulary instruction. In other words, whether one possesses a high cognition level or not, class discussion is of no benefit to him or her, meaning that those higher in cognition level require no class discussion and those low in cognition level are not blessed with diagrams or

graphic forms in their mind and what lacks in their mind can not be discussed. Thus I assert that cognition theory reasonably contradicts the discussion theory.

ASSESSMENT OF THEIR RESEARCH METHODOLOGY

In terms of the research methodology the highlight of Steven and Sandra's article is the use of the Gates-MacGinitie Reading Tests, which balance three different test classes and guarantee that there are no conspicuous differences among classes. As for the post-tests methodology, the two authors directly assign the words and set the groups with no data presenting and supporting the rationality of the methodology. The methodology should have been more quantitative.

ASSESSMENT OF THEIR RESEARCH RESULTS

Steven and Sandra draw a table to present their test results to convey the idea that discussion is a crucial factor in semantic mapping. However, they themselves expose the result drawback that for the anomalous test the semantic map only class gets a higher score than the other two classes with discussion. With a table full of statistics the results seems reasonable. But I would like to pose a question, that is, how can we distinguish the source of the results? Maybe the real source of the results are accumulated by every individual's cognitive ability.

CONCLUSION

As is mentioned above, we may reasonably arrive the conclusion that Steven and Sandra's theory is highly problematic. Accordingly, I believe that Steven and Sandra's claim should not be accepted.

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REFERENCES

- Stahl, S. A., & Vancil, S. J. (1986). Discussion Is What Makes Semantic Maps Work in Vocabulary Instruction. *The Reading Teacher*, 40(1), 62 - 67.
- Stahl, S. A., & Vancil, S. J. (1986). Discussion Is What Makes Semantic Maps Work in Vocabulary Instruction. *The Reading Teacher*, 40(1), 62-67.
- A Semantic Mapping Lesson Plan. (1986). *The Reading Teacher*, 40(2), 236-238.
- Johnson, D. D., Pittelman, S. D., & Heimlich, J. E. (1986). Semantic Mapping. *The Reading Teacher*, 39(8), 778-783.
- Kim, J., Kim, J., Hahn, J., & Hahn, H. (2000). How Do We Understand a System with (So) Many Diagrams? Cognitive Integration Processes in Diagrammatic Reasoning. *Information Systems Research*, 11(3), 284-303.
- Chandrasekaran, B. J. Glasgow, N. H. Narayanan, 1995. Introduction. AAAI Press, Menlo Park, CA. xv-xx.
- Larkin, J., H.A. Simon. 1987. Why a diagram is (sometimes) worth ten thousand words. *Cognitive Sci.* 11(1) 65-99