THE FRAYER METHOD: TEACHING VOCABULARY IN THE SCIENCE CONTENT AREA FOR MIDDLE SCHOOL LIFE SCIENCE

**Background:**
The purpose of this classroom project was to teach 21 Life Science seventh grade students the Frayer Method for vocabulary acquisition and compare the results to the traditional method of searching for the definition and simply writing it down. I have been experimenting with different vocabulary techniques for many years and have not been happy with the results I have obtained. My hope was this method, with its interesting approach to new words, would resonate with my students where they would not only be able to define the new science vocabulary, but also use the terms in science context.

**Primary Question:**
What is the impact of using the Frayer Model on student understanding of vocabulary and their ability to use it in a science context?

**Pre-Treatment:**
Students took pretests then looked up and defined their vocabulary words at the beginning of each unit. Pre- and post tests were divided into matching definitions and a section for contextual knowledge. Words were covered in class through lecture, labs, word wall and discussion. A post test was given at the end of the unit.

**Treatment:**
Students took the same pre-post test regime. Students were trained to use the Frayer Graphic Organizer. Before a new unit, students took a post-test. Students used the organizer after finishing the unit. When the unit was completed, a post-test was taken.

**Original Graphic Organizer**

**Data:***
- Normalized gains comparing pre- to post-tests.
- A paired-t test was calculated on the normalized gains averages to check for validity.
- Students self-assessed with the new term during the test sheets.
- Pre vs Post-test definitions compared
- Pre vs Post test context compared
- Test was used to determine validity.

**Data Interpretation:**
- Pre Definition: 77.65%
- Per Contextual: 70.20%
- Post Definition: 84.37%
- Post Contextual: 79.56%
- Definition test: p = 0.3293
- Contextual test: p = 0.9506

**Values:**
- Even though pre and post-test and t-test scores did not prove an instructional difference between the control and treatment, I believe the value in teaching vocabulary is the overall knowledge. Student self-assessment was helpful students level of motivation and learning.

**Secondary Question:**
What are the students’ perception about the usefulness of the Frayer Model for helping them understand vocabulary?

**Data:**
- Student’s responses were favorable.
- Student’s preference to vocabulary acquisition - comparison method vs. Frayer method.
- Like Frayer
- Comparing Method vs. Frayer Method
- Treatment:
- Student’s preference to vocabulary acquisition
- Method

**Values:**
- Muddiest point sheets did not have any value. Students would not use the resource.
- Pre and post-tests were helpful in measuring student growth.
- New assessment sheet was an excellent tool. Students assessment potency and engagement low.
- Questionnaires were adequate. Tools appeared amateurish. Better research could have been done to create a better tool.
- Students liked using the graphic organizer and said they would continue using the tool.

**Student Comments-Favorable:**
- These included the following positive comments:
  - “[it] helps me learn new words.”
  - “they are available in my vocabulary book.”
  - “I do not have to use a dictionary or my book.”
  - “it works”
  - “it gets more stuck in my head”
  - “it works”
  - “it’s fun”
  - “it’s easier”
  - “it’s easier to understand”
  - “working on one word at a time – we could go on to the next”

**Student Comments-Unfavorable:**
- These included the following unfavorable comments:
  - “[it] is okay, I wish it was a little easier”
  - “I don’t like doing book assignments” (referring to directed readings)
  - “there is nothing I like about this”
  - “it’s work.”

**Student Interviews:**
- Even though pre and post tests showed no instructional difference between control and treatment, the students still liked using the graphic organizers.

**Teacher Observations:**
- Even though pre and post tests showed no instructional difference between control and treatment, the students still liked using the graphic organizers. Students liked using the graphic organizer, however, a revised organizer would be more appropriate for seventh graders. Group work was not efficient, individual would be better. Vocabulary should be multi-approach.

**Pacing Guide Evaluation:**
- Comparing last year’s lesson plans to this year, the same amount of material was covered this year as last. Using graphic organizer did not really affect curriculum guide.

**Wrenshall Welcomes You’ Picture taken by S. Tracy**

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