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Topic:

Developing Word Knowledge in Content Areas

Relevance:

Verification of Tennessee Terra Nova scores indicates that the students of Northwest Middle lack adequate vocabulary in all content areas. Sharon Robinson, Northwest Assistant Principal, and I discussed three essential topics relevant to the School Improvement Plan (SIP). As the discussion continued, we selected one topic that was in greater need of improvement.

Rationale:

Vocabulary is the fundamental component to communicate and comprehend the English language. Improving the student's vocabulary in all content areas increases their ability to effectively speak, read and write. During my first year as a teacher, my mentoring teacher, Mr. Jim Garrett said that no matter what subjects I teach always teach subject vocabulary. His theory was based on ELL (English Language Learners). His philosophy was "If it's good enough for the ELL students, then it's good enough for young American students." Research states, "Students must comprehend 75% of the ideas and 90% of the vocabulary of a content area to read it on an instructional level." The Northwest leadership team has assessed that our students lack sufficient vocabulary necessary for success. The main organization of this study is to prove that knowledge of word meanings is a critical component to reading comprehension. With vocabulary words, tied conceptually, this foundation supports comprehension and increase knowledge through various subjects. With this knowledge and through research, I will teach vocabulary using various strategies suggested by the research.

Questions:

- What are some teaching strategies to increase math and reading vocabulary, which could also apply to all other content areas?
- How effective are the teaching strategies to help students understand the content areas?

Research Support:

- Mora, J.K., (2000). *Teaching Concepts and Vocabulary - Principles and Strategies*. Retrieved January 17, 2002 from <http://coe.sdsu.edu>

The article spoke about concepts and the level of critical thinking between words and ideas. The author gives examples and ideas on teaching word meanings related to concepts with vocabulary as the focus.

- Mora, J.K., (2000). *Reading in the Content Area: Study Guide and Vocabulary Activities*. Retrieved January 17, 2002 from <http://coe.sdsu.edu>

The article informs the reader that specific vocabulary words are used to convey concepts, facts and generalizations. Vocabulary activities and study guides provide a "framework for understanding the content areas."

- Jelinek, A., (2000). *Thirteen Strategies to Improve Reading Performance*. Retrieved January 17, 2002 from <http://www.education-world.com>

Anthony Jelinek, principal of Chicago's Hibbard Elementary School writes that leadership is essential- leadership and 13 practical strategies to help nurture concrete, measurable gains in reading. Chicago's urban schools were identified by the Academic Accountability Council as "most improved" because of the student's superior performance in the reading and math of basic skills. He reports on 13 common strategies that showed dramatic improvement for reading.

- David, M.A. (1999, November). *Reading at the Middle Level: Change May Be Good, But Not Always Easy*. NASSP Bulletin.

Mrs. Marjorie David writes that her school Barnwell Middle School changed their reading model from a "pull-out" program to using one reading teacher as an educational resource teacher. The Educational Resource Teacher's primary role was to provide assistance through regular classroom instruction. The intent was for the ERT and the regular classroom teacher to determine instructional alternatives for more effective learning on the part of educationally deprived students. It is imperative for the ERT and the cooperating teacher to be equal partners in improving reading/writing in their content area. The "pull-out" program reached 40-50 remedial readers who received individual attention whereas; the ERT model does not exclude reluctant readers. The ERT model provided for all students to engage in a multitude of learning opportunities and activities in various content areas.

- Olson, S., (1999). *Word Wall Activity List*. Retrieved February 22, 2002 from <http://www.teachers.net>

Activities depict the "word wall". A systematically organized collection of words largely displayed around the classroom. Elementary oriented that would be easily adjusted to middle school level.

- Wilcox, S.K. (1998, May). *Using Assessment of Student Learning to Reshape Teaching*. *Mathematics Teaching in the Middle School*.

Ms. Wilcox discusses the use of concept mapping in the middle school math classroom. Using this form of teaching strategy allows the student additional information on understanding concepts as well as allowing the teacher additional information on the direction of future teaching.

- Baker, S.K., Simmons, D.C., and Kameenui, E.J. (1997). *Vocabulary Acquisition: Synthesis of the Research*. Retrieved February 22, 2002 from <http://idea.uoregon.edu/tech13.html>

The article gives significant research and evidence of the number of methods used to increase vocabulary development. However, the article emphasizes the importance of "the implementation of a program designed to enhance vocabulary development that reduces the vocabulary gap between groups of students without restricting the vocabulary development of average and high-achieving students."

- Smith, C.B., (1997). *Vocabulary Instruction and Reading Comprehension*. Retrieved January 31, 2002 from <http://www.ed.gov/databases/ERICdigest/ed412506.html>

The author contends that research shows that teaching vocabulary, as a prereading step is an instructional obstruction that should be considered when readers lack the prior or background information to read in a content area.

Design/Methodology

Participants will include 83 students of whom 38 are male and 45 are female. Of the total 7th grade Math and Reading participants, 68 are Caucasian and 15 are African Americans. Although, the total number of males and females were about evenly split, the total number of Caucasian students represents 82 percent with

the number of African Americans representing 18 percent. A breakdown by male, female, Caucasian and African American is shown below:

		Percentage	Caucasian	Percentage	African-American	Percentage
Male	38	46	33	41	5	13
Female	45	54	35	41	10	5
Total	83	100	68	82	15	18

Time frame consists of 27 weeks (August 2001 to March 2002).

This study is to show that knowledge of word meanings is a critical component to reading comprehension. With vocabulary words, tied conceptually, this foundation supports comprehension and increased knowledge through various subjects.

Data that will be collected:

- * Pre/Post test scores
- * Class averages (6th and 7th grade)

How will the data be collected?

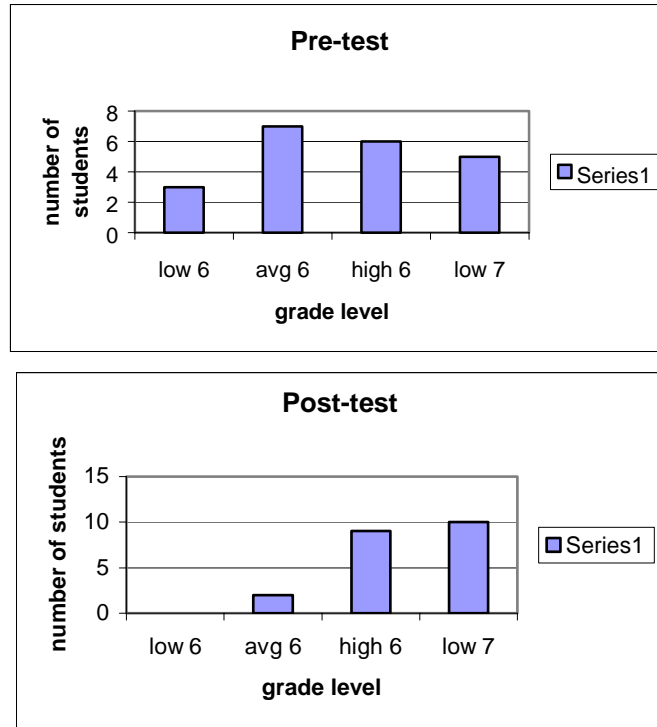
- * Students test scores
- * 4-6 weeks class averages

Research findings will also include data collected from a 6th grade language arts novice teacher at Northwest Middle School. Tina Shelton, graduate of East Tennessee State University has been utilizing different teaching strategies stressing the importance of vocabulary. The data collected consisted of an "instructional sequence that allows for multiple exposures in multiple ways." Her participants included 21 students from her sixth grade Reading class.

Findings

Northwest identified vocabulary as one of the areas needed for improvement. Therefore, at the beginning of the school year, emphasizes were placed on vocabulary strategies through reading classes. In *Classroom Works*, the authors state "If students experience words before reading them in context, they have a greater chance of learning the words and understanding them in context."

Each student was given a Knox County Vocabulary in Context test. Based on individual scores, students were placed in reading groups. In the pre-test results, the reading students ranged from low 6th grade to low 7th grade. Students were given the same test on Friday (4-5-02), before the Terra Nova test. They showed a significant increase in vocabulary testing.



Content vocabulary was taught in a variety of ways. The 6th and 7th grade Reading teachers used the five-step process:

1. Identify vocabulary words in the story or unit of study
2. Vocabulary groups: assign one vocabulary word to each group
3. Identify definition from dictionary then definition using context. Write a synonym, a sentence or draw a picture that applies to the word. Perform a skit or play "pictionary". Seeing the definition in action helps remember the word.
4. Hang vocabulary word with information on a "word wall". Words stay up for visual effect until test day.
5. Refer back to the words as the story is read or as the word is used in the unit.

When researching information on vocabulary teaching strategies, one must realize that vocabulary activities must be tied to what the students are learning or want to learn. Vocabulary in the Math content area was taught in a variety of ways. To understand math word problems a series of basic words were given to the students and discussed how they are related to math. For example, the word "total" gives the student a clue to "add" the numbers. Also, during the geometry unit, art projects were incorporated into the vocabulary development: using origami to make octahedrons stressing several geometric terms, string art calling attention to the definition of angles and using symmetry with their names to underline mirror images. Graphic organizers were used to explain and show math vocabulary as well as math problems. The Internet offers an abundance of

great ideas for teaching vocabulary in content areas. Many websites are listed with a variety of strategies to help implement vocabulary in other content areas. Listed below are some activities to help “energize” lesson plans.

Word Wall: a systematical organized collection of words displayed in large letters on a wall or placed around the classroom.

Word Jar: Write the vocabulary word with definition on a slip of paper or index card and place in a jar. Have a student pick a word from the jar. Read the word to the class and have them spell the word and/or give the definition. Continue with the other words. This activity can be used for the entire year, which encourages constant review of all vocabulary terms.

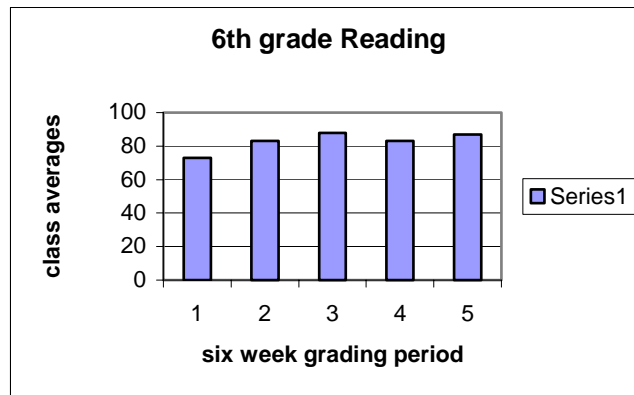
Bingo: (several varieties are suggested) Using blank bingo sheets have students write the words drawn out of the word jar in various spaces. Once this has been done, the teacher replaces the words into the word jar. Shake up the jar and begin to draw out words. The teacher can say the word or give the definition and then the students will place markers over the given word. The student with the completed row wins Bingo.

Vocabulary Quilt: Giving each student a blank “quilt” of 26 squares. Label each square with a letter of the alphabet. Using this sheet, have students add vocabulary words in each appropriate square. Add words to the “quilt” as the year continues. Remind students that they can use the “quilt” as a reference for writing activities.

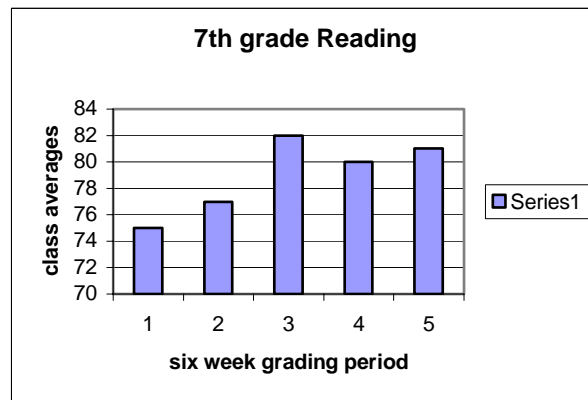
Symmetry Art: A figure is symmetric if a line (real or imaginary) divides it into two congruent (equal) parts, which fit together exactly when folded on the line. Fold a piece of construction paper (8 ½ x 11) in half lengthwise. Write your name in large cursive letters along the fold line with a piece of chalk. Remember that letters should reach almost to the top of the paper. If your name should have a “tail” leave the tail off. The bottom of each letter must touch the fold and all letters must be connected. Cut around your name, not on the line but away from it, to make large, fat letters. Cut out the centers of any letters such as o,e,d,etc. Gently wipe off the chalk. Open the design and glue it onto a piece of paper of a contrasting color.

Origami: A Chinese art form of folding paper and making various shapes. Utilizing this skill, students are introduced to various math vocabulary words such as fractions, angles and triangles. Once the twelve pieces are made then the students have the task of putting them together forming a model of the octahedron.

The effectiveness of the teaching strategies to help students understand the content areas is shown in the following graphs:



Tina Shelton, a novice teacher at Northwest Middle School used similar strategies emphasizing vocabulary words. Her class average of 21 students demonstrates an increase each six weeks. However, there is a slight decrease between the third and fourth grading period indicating an interference factor.



Using the same variety of vocabulary activities, the 7th grade reading class averages increased each six weeks as well as increasing class awareness in learning new words. Results show an increase each six weeks with a slight decrease between the third and fourth grading period.