Does using Auditory Memory Techniques develop a quicker schema in reference to 5th grade FCAT Science Vocabulary?

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3rd Grade

Crystal Springs Elementary

MURMSI Action Research Final Report

1. **Focus Statement:**

High-stakes testing such as the FCAT also has been mandated in this county (and supported by state of Florida) in support of the 2001 No Child Left Behind Act. These high-stakes test scores have serious implications for students who are not promoted to the next grade or who don't graduate from high school. The high-stakes test scores are also used to examine a classroom teacher's effectiveness and student performance plays is a significant factor in the annual evaluation of teacher performance.

These two issues have strongly influenced this action research project. Working in third grade as a classroom teacher, I seek out knowledge needed for planning and implementing instruction. By participating in on-going professional development, I gain insight into my instructional practices and believe my newly acquired knowledge will affect the quality of learning opportunities for my students. Using data to drive classroom instruction empowers me in my profession. Therefore it is my contention to discover the fastest and most enduring way to imbed FCAT Science vocabulary in my students.

Recently concluding an Action research project that involved Drilling Math facts verses using everyday learning centers I discovered that vocabulary was an essential component of this content knowledge. So, since my uncovering, that the majority of 5th grade Science terms are taught in 3rd and 4th grade, I wanted to discover the quickest and fastest way my students could develop their own schema for the FCAT Science vocabulary.

2. Literature Review

Today, cognitive researchers are spending more time working with teachers, testing and refining their theories in real classrooms where they can see how different settings and classroom interactions influence applications of their theories. Discovering the ways that people learn how we perceive and process information and utilize this knowledge to balance personal learning styles and achieve learning success is the reason for this research. (Davies) It was decided by the way my own students processed directions that I chose this form of instruction for my research.

The **auditory learners** should be memorizing aloud, listening to tapes, asking questions, debating and discussing and giving talks; our memory for faces, names, facts and figures etc. can be trained.(McKinnis,1999) Our memory is relative to age and life experiences. The brain remembers everything, the problem that we have is ineffective recall. By learning to use techniques of visualization, association and imagery we can learn to recall more efficiently. (Paas, 2003) We remember information best when it is characterized by: sensory associations, emotional context, intense associations, and necessities for survival, personal importance, repetition and what is presented first and last in a session. (Mousavi,1995) By using auditory memory techniques it is essential that teachers and all educators be aware of the importance of students processing strengths. It is my contention that by using these methods future educators and I will be successful.

As we change our learning, our identity--and our relationship to the group—changes. Knowledge is inseparable from practice. It is not possible to **know** without

doing, by doing, we learn. Teaching practices congruent with a metacognitive approach to learning include those that focus on sense-making, self-assessment, and reflection on what worked and what needs improving. These practices have been shown to increase the degree to which students transfer their learning to new settings and events. In this paper I propose that these students were engaged in processes that are conducive to each student's individual style of learning.

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3. **Variables of this Research:**

The make up of the two experimental classrooms are; 2 third grade inclusion classrooms. Class A was a class of 30% SLD students where as Class B is made up of 52% SLD students. In each of these classrooms it was determined by their psychological testing that there was a high number of students that were lacking in auditory memory techniques. It is the researcher's opinion that these students have not yet experienced sufficient opportunities to develop this area of learning to make beneficial to the students' mode of learning. Therefore it was this researcher's contention that this would be the mode of delivery of the information that would be presented to the experimental group. The control group would be presented a list of words, and the students will be instructed to copy the definitions down from the glossary and take them home and study them. The researcher used word webs and

Venn diagrams to activate the students' prior knowledge so that this information would be meaningful and significant.

The experimental group will use computer game resembling hangman to introduce the vocabulary words. Then divide into corruptive groups for the remaining sequence and do role playing activities with the definitions and make the student act out their vocabulary words.

4. Research Questions:

Class B has difficulty in controlling behaviors so it is difficult to learn new concepts. Class B had certain rules, in the Jeopardy game. After the vocabulary word was said, then the definition could only be said once and the words must be recited in the form of a question.

1. Could the students abide by the school's code of conduct to play this game?
2. When using the Styrofoam balls could the student's follow all directions to the completion of this activity?
3. Playing the matching game did the students play fair when recording their data of who was the winner of the game?

5. Approach:

This research was taking place in the final days of the school year. So the students' behavior was an intricate part, as well as their auditory processing behaviors to have success with these lessons.

Class A was presented with the vocabulary words and looked them up in the glossary and took the words home and studied them.

Class B used Computer simulation Hangman game to introduce the vocabulary, then did a role playing activity with 10 words. It must be understood that these students have had some familiarity to these words in the past. Next, using the Styrofoam balls the students had to act out the positions of the planets and explain the orbiting of the planets around the sun. Afterward the students had to play a matching game, matching the definition to the vocabulary word. This was particularly difficult for the students that have a hard time reading vocabulary words. In conclusion the students divided into groups and they have to act out the food chain.

6. Negotiations:

I had been in the process of doing Action Research during this entire year. So I sent home surveys for the parents to fill out, while the students had their own surveys that were to be completed. The Language Arts teacher has been in the process of this action research through out this entire year and has been extremely supportive the entire year, as well as the principal.

7. Timeline:

This is in the appendix section of this report.

8 Data Collection:

First, this researcher sent home an interest survey to the parents in order to gain some insight in parent involvement in the science education of the students. Subsequently the students in the 2 classes recorded their own opinions of Science and what they are familiar with in the past years of their education.

It was decided to obtain the SDRT test from the beginning of the year. This test has data that examine phonetic analysis, vocabulary and comprehension. This data is beneficial because the pretest has comprehension and sentence completion components that appear in this assessment. Being sensitive of this data is another component to identify weaknesses in students' ability. Then it was determined that the NRT 2005 was used for the literary and informational portions of this test to see if improvement would be apparent. (Appendix) Later the Science pretest was composed of Science vocabulary that was obtained from the FCAT information assessment booklet. At the conclusion of this study a post test was given and the two tests were compared in a graph. (Appendix)

9. Data Analysis interpretation:

Although both classes were similar in most sub tests on the SDRT , in vocabulary class B was almost a grade level above class A. This is key when the findings of this report are determined. Both classes were equal when using the literary and informational sub tests of the FCAT. Class A seemed to have a slight advantage in the literary portion of this sub test; one would observe that this class has a greater number of students read for understanding. In comparison to Class B showed that this class is consistent in both areas of literary and informational.

After the completion of this research the post test was given. Class A had 19% improvement and class B had a 31% improvement. This is a somewhat significant increase but understandable considering this particular class according to the SDRT was advanced in this particular type of information.

10. Action Plan that has emerged from your research:

Does following JUSI Science curriculum and the use of the book compared with using the Understating by Design format increase students learning?

11. My reaction of doing this Action Research project:

I feel that I have been doing an Action Research project this entire year. I have enjoyed doing the research and discussing topics with many of the generous colleges that I have had the privilege to be associated with. I learned how to set up Excel sheets for data collection. I learned how to set up charts in a word document. I discovered how to write comparing and contrasting of different research projects. The list can really go on forever of everything I have learned. During the Understanding By Design workshop today I had mentioned to other teachers at my table how developing a curriculum in this format is very similar to Action Research.

12. Networking tools:

The Blog seemed difficulty for me to get into. There were times that I put things on the blog and the material would just come off. The people that I was associated with were the primary help in this research. Having the monthly meeting was enjoyable and helpful.

13. Supporting Documents:

The surveys, data collection pieces and charts will be presented in an appendix, these items were done in excel sheets therefore can not be placed in a word document.

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Action Research Post test Name _____

Complete questions with the words in the box.

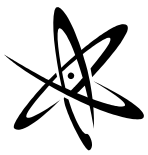
Ecosystem	decay	camouflage	atmosphere
Eclipse	convert	habitat	fossil fuel
Experiment	satellite	offspring	recycle

1._____ A fuel formed from decaying organisms.
2. _____ To turn one thing into another.
3._____ A group of plants, animals and environmental factors that affect one another.
4._____ The air surrounding the Earth.
5._____ The "children" of plants and animals.
6._____ An object that orbits around the Earth or another heavenly body.
7._____ A test performed to prove something.
8._____ The place where an organism lives.
9._____Disguise
10._____ To break down over time. When an organism dies, it _
11._____ To use again
12._____ The blocking of light from the sun, When the moon passes between the sun and the earth.

Circle the correct answer

13. This is a picture of a (A) virus (B) reptile (C) particle

14. 



This is a picture of (A) molecule (B) solid (C)Weight

15. This is a picture of (A) gas (B) Friction (C) insect

16 This is an example of a (A) solid (B) liquid (C) gas

Match the following terms to their definitions:

17. Gas _____	(A) An animal that hunts other animals for food
18. environment____	(B)Has a definite shape and weight
19. solid_____	(C) Having to do with heat
20. renewable_____	(D) A measure how heavy something is
21. Texture _____	(E) Can expand to fill the container
22.Thermal _____	(F) The feel of a surface
23. Weight_____	(G) A person's , animal's or plant's surroundings
24.Population_____	(H) Able to use again
25. Predator_____	(I) The number of one kind of organism in a habitat

26. Draw a picture of the solar system.

27. Give an example of a resource_____
_____.

28.Give an example of prey_____
_____.

29. Discuss or example of condensation_____
.

30. What is the boiling point in F____ and C _____ degrees?

31. What does buoyant mean?_____
_____.

32. What is gravity?_____
_____

33. What is Fungi?_____
_____.

34. What is a habitat/_____
_____.

35. Give an example of a mammal_____

36.Give an example of friction_____
37. Draw a picture of a food chain

References:

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Crystal Springs Elementry3rd grade

ScienceVocabulary Timeline

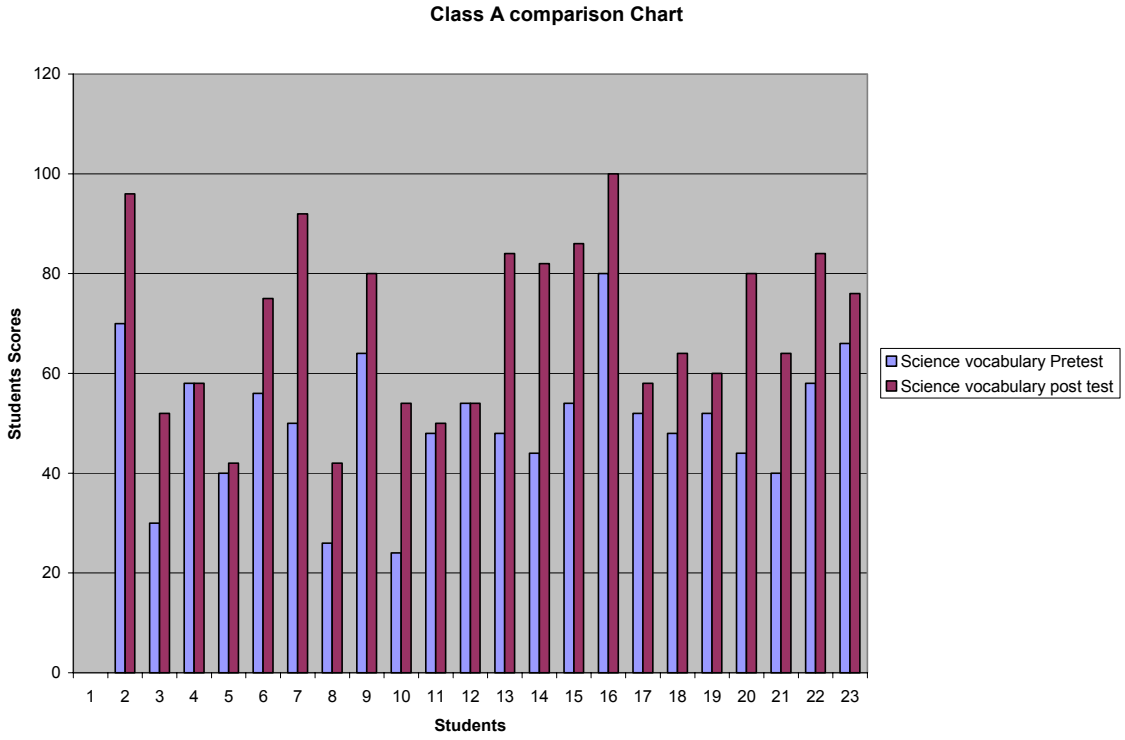
FCAT Science Vocabulary Action Research

Class A Give Science vocabulary Pre test	Intoduce vocabulary 5 words on board write definitons from glossary	Introduce 10 vocabulary look definitions in glossary	Introduce 10 vocabulary words looking up definitions in glossary.	Students look up Solar system in books and write definitons and draw pictures of solar system.	Look up final 5 vocabualry words in glossary	Draw a picture of food chain	Study for Post test	Science FCAT Post test given	Post test Graded
4/18	April 19-22	April 25-29	May2-6	May 9-10	May 11-12	5/13	5/16	5/17/	5/18
Class B Give Science Vocabulary Pre test	Play computer hang man using FCAT Science vocabulary	Play Jeapordy game using vocabuary words. Calling out definitions students guess voccabuary word.	Using cooruputive groups students role play definitons of 10 Science vocabulary words.	Dividing into 4 groups using colored styroform balls students act out the solar systems and placment of planets and the rotation of the sun.	Play card game using vocabulary words and cards with definitions matching game rules.	Students divide into groups of different sections of food chain. Then role play and describe how different sections of chain interact with each other.	Study for Post test	Science FCAT Post test given	Post test graded

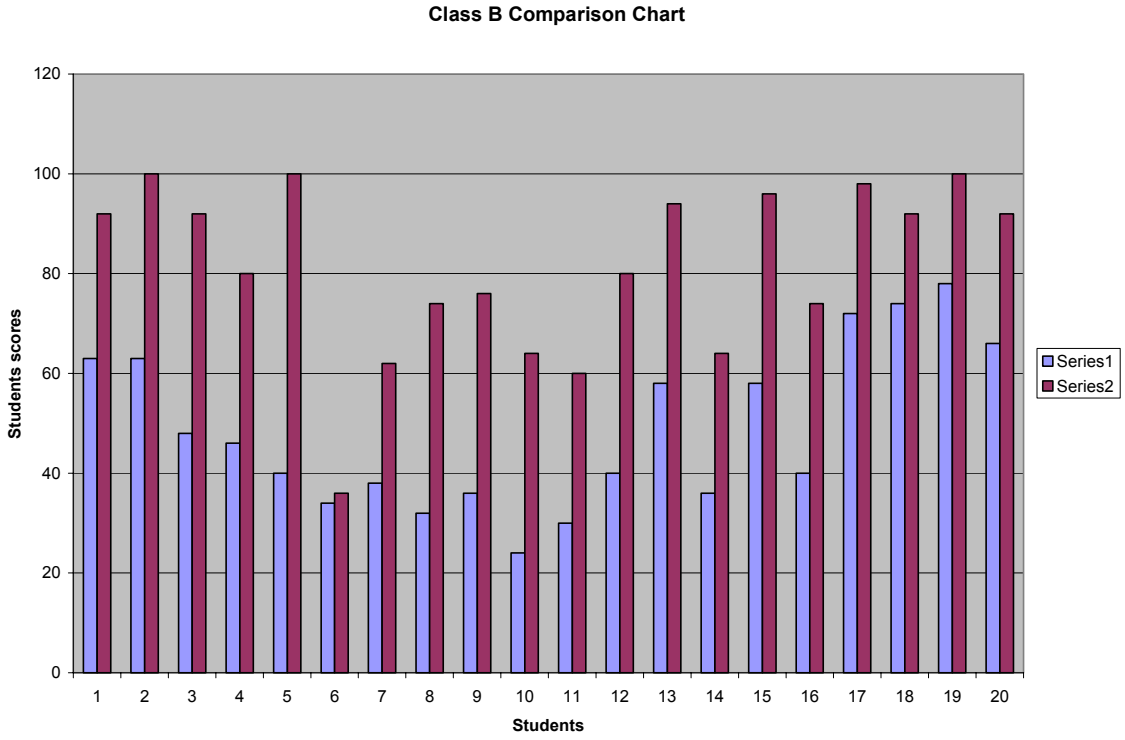
Science Vocabulary Data Collection

Class
A

Names	SDRTPhonetic analysis	SDRT Comprehension	SDRT Vocabulary	Grade Equiv	NRT 2005 Literary	NRT 2005 informational	Science vocabulary Pretest	Science vocabulary post test
Total					18	18		
1	2.1	2.3	2	2.1	**12**	**6**	70	96
2	2	2.1	0.9	2.2	**9**	**8**	30	52
3	3.4	3.3	3.4	3.4	**14**	**12**	58	58
4	2.5	2.4	4.4	2.9	**13**	**8**	40	42
5	3.6	2.9	8.9	3.6	**11**	**12**	56	75
6	10.9	3.6	3.6	4.6	**5**	**6**	50	92
7	1.5	2.4	2.5	2.2	**4**	**5**	26	42
8	10.9	3.3	5.7	5.2	**15**	**14**	64	80
9	2.3	2.5	2.1	2.3	**9**	**9**	24	54
10	3.1	3.1	5.7	3.4	**7**	**8**	48	50
11	1.6	1.5	2.5	1.9	**12**	**12**	54	54
12	1.3	1.5	2.5	1.9	**15**	**14**	48	84
13	1.8	3.9	3.4	3	**12**	**9**	44	82
14	3.1	3.1	5.7	3.4	**8**	**7**	54	86
15	3.6	3.6	4.4	3.7	**16**	**18**	80	100
16	1.2	0.9	3.4	1.3	**7**	**6**	52	58
17	1.4	2.4	3.4	2.3	**8**	**8**	48	64
18	1.3	3.3	3.6	2.6	**11**	**6**	52	60
19	7.9	3.9	3.4	4.1	**16**	**11**	44	80
20	1.1	2	1.9	3	**9**	**9**	40	64
21	2.5	3.1	3.1	3	**16**	**14**	58	84
22	2.1	2.3	2	2.1	**16**	**14**	66	76
TOTAL	3.2364	2.7	3.57	2.92	**11.136**	**9.82**	50.27273	69.68182


Class A comparison Chart
Students Scores
120
100
80
60
40
20
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23
Students
Science vocabulary Pretest
Science vocabulary post test

Science Vocabulary Data Collection								
Class B	SDRTPhonetic analysis	SDRT Comprehension	SDRT Vocabulary	Grade Equiv	NRT 2005 Literary	NRT 2005 informational	Science vocabulary Pretest	Science vocabulary post test
Total					18	18	50	50
Names								
1	1.3	1.8	1.8	2	9	9	63	92
2	4.7	2.5	2.8	2.8	3	5	63	100
3	5.5	2.3	3.3	3.9	14	8	48	92
4	2.2	2.4	2.1	2.3	11	11	46	80
5	7.9	4.4	5.6	7.3	15	15	40	100
6	1.2	0.9	2.2	1.7	6	5	34	36
7	3.4	2.9	2.8	3.1	15	14	38	62
8	2.1	2.9	3.3	3.2	10	8	32	74
9	2.1	1.9	2.4	2	8	9	36	76
10	2.5	2	2.7	2	3	7	24	64
11	2.5	2.7	2.3	2.8	7	10	30	60
12	1.6	2.9	1.9	2	13	10	40	80
13	3.6	3.2	3.3	3.4	14	12	58	94
14	2.1	1	1.4	1.8	7	6	36	64
15	7.9	3.3	3.9	5.6	10	15	58	96
16	3.6	2.4	2.4	2.3	9	8	40	74
17	7.4	3	3.9	3.9	13	13	72	98
18	5.6	3.8	2.6	3.9	14	17	74	92
19	4.4	4.3	4.7	5.8	16	17	78	100
20	2	1.9	1.6	1.8	13	11	66	92
TOTAL	3.68	2.625	2.85	3.1	11	10.5	48.8	81.3


Class B Comparison Chart
Students scores
120
100
80
60
40
20
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
Students
Series1
Series2