The Journal of Advanced Science Methods of the Mississippi Teacher Corps

The University of Mississippi

Volume III

Fall, 2006

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Introduction

Teaching *Advanced Methods of Teaching Science* continues to be a very rewarding experience for me as a science educator. This year's class features some very dedicated teachers that have come into the **Mississippi Teacher Corps** with strong academic backgrounds. It has been a pleasure to have been associated with these young educators this semester.

The class this year features: Elena Adamo (biology and physics, South Delta High School), Grace Awantang (biology, Hinds County Public Schools), Jeremy Fiel (chemistry and physical science, Leflore County School District), Ashley Johnson (general science, Greenwood Middle School), Julia Keith (biology, Provine High School), Lisa Shaffren (biology and chemistry, South Delta High School), and Lisetta Shah (general science and biology, Greenwood Middle School).

The articles that are included in this volume have a great deal of variety. The articles exemplify thought and planning

I am grateful that these students have chosen to be science educators and believe that they can have a positive influence on the students that they are associated with.

Assignment Specificity: Creativity vs. Reliability

Elena Marie Adamo

When assigning students a project, report, essay, or other large, free-response assignment, a delicate balance exists in deciding the specificity of the instructions to be given. On the one hand, a brief and general assignment allows students the freedom to be creative and you are likely to receive much more variety in the product that is turned in. On the other hand, students also have more freedom to slack off or misunderstand the assignment and some of that "variety" is likely to come in the form of very poorly done assignments.

In my four months as a teacher I have given three different essay assignments of varying specificity. The first laid out the exact content to be included in every paragraph and left very little room for variation or creativity.

> Write a 1-3 page essay explaining what we have learned about the four types of macromolecules. Your essay should include an introduction to macromolecules, at least one paragraph each on carbohydrates, lipids, proteins, and nucleic acids, and a conclusion. You may use whatever resources you wish but you may not plagiarize; this should be your own writing. For each type of macromolecule you should explain its structure and function and how the structure allows the macromolecule to perform its function.

The product that I received was horrendous. Almost everyone plagiarized their paper. They either wrote what the textbook said about each type of macromolecule directly or they did a Google search and copied and pasted.

I blamed the failure of this assignment on two things. First, I did not adequately explain to my students what plagiarism means and what the consequences would be if they plagiarized. Second, I did not explain to them how to do the assignment correctly. I also

acknowledge that my students' laziness and generally slacker-like tendencies played a part.

The next two assignments were less formal and were met with a more varied and more acceptable response. They were as follows.

> Write a report on a part of the cell. You may choose any part you like. You should explain both the structure of this cell part and it's role in the overall function of the cell. Your report should be at least one page and should be your own work.
>
> Explain, in your own words, the process of DNA replication. Your paper should be at least one full page and should include the role of the three enzymes we have discussed in class.

In these two prompts the students are given much more freedom to decide the form and content of their work. Fewer assignments were turned in, without the comfort of explicit guidelines. Many students still turned in clearly plagiarized reports. Yet among them there were several that really shone. Like many aspects of teaching in these high risk areas, our inspiration does not come from the average student, but from the exceptional gem who, with a little extra help, can be brilliant.

From what I can find, the literature has very little to say on this particular topic. I did discover that high achieving students are more likely to express a preference for explicit directions on the style and format of their writing assignments (Belcher, Armstrong & McKinnon, 1998). This is, on the surface, incompatible with my observations. Yet, using my own educational experiences as a reference, I believe I can explain. These high achieving students that this study addresses, and of which I consider myself a part, are extremely preoccupied with their grades. They have a constant fear of failing because they have never really done it. When asked to be creative on an assignment that fear creeps in. With specific guidelines they feel safe in the knowledge that they can follow the teacher's instructions and receive a good grade for their work. Asking them to

really think can be an uncomfortable experience, yet I believe it is an essential part of creating a high achieving student who can actually achieve in the real world. Despite what they may want, what they need is to be pushed. Another explicit assignment is no challenge. In my experience, when forced to do so, these high achieving students can be exceptionally creative and can certainly rise to the challenge posed by a more open-ended prompt.

There is no set direction that can be advised here. The type of prompt that you select must depend on what you hope to accomplish through the assignment. Specific guidelines will allow direct control of the content and thus increase the probability that the students will become familiar with this content through writing and processing the material. A more explicit assignment also seems to increase the percentage of students who turn the assignment in, whereas the general prompt leaves many feeling unable to tackle the job at hand. On the other hand, A vague assignment gives students the freedom to express themselves and to demonstrate their strengths to you.

Bibliography:

Belcher, M.J, Armstrong, J. & McKinnon, E. *Instructional Practices: Student Preferences, Teacher Use, and the Gaps Between.* Research Report 98-03.

A Foundation for Success: Teaching Study Skills and Literacy

Grace Awantang

EDSE 646

Solid study skills are an integral part to any child's success in high school and college. However, like the material itself, study skills must be taught. It is presumptuous to assume that high school students will be able to pick out the main points of a reading passage, paraphrase a copyrighted source, keep track of their homework, and be able to dutifully record the main points of a lesson independently. Roughly two months into the academic year, I discovered with dismay that my students were not taking notes during class. This prompted me to emphasize good note taking skills as a priority. Along with note-taking, students must be taught other study skills and these must be reinforced repeatedly. Because students' difficulty in taking notes is highly linked to their reading and writing ability, I also address such literacy skills at the conclusion of this article.

In her book, "A Framework for Understanding Poverty," Dr. Ruby Payne sites disorganization as a frequent characteristic of students living in generational poverty. More specifically, such students "are very disorganized, frequently lose paper, don't have signatures... [and] don't do homework," (p. 60). Payne argues that planning, scheduling, or prioritizing skills are not taught in poverty and that such students have no where at home to place their possessions (p. 81). These descriptions coincide with the behavior of many of my students although I cannot verify their cause. One fifth of the community surrounding my high school in poverty; nearly one third of individuals in the area are unemployed. Still, these statistics are of limited use given the large area from which the school enrolls students. Along with disorganization many students have low expectations for their classes, have difficulty pacing themselves when given independent work, following detailed assignment directions, and are resistant to attempts to adopting new study habits. The prevalence of the second pattern struck home when I finally realized that one of my lower-level classes would require highly structured learning strategies and constant supervision to ensure they used their time efficiently.

The lack of good study habits has been documented by academics in clear opposition to what many might think. "Although secondary level teachers often assume that all students have acquired sufficient study skills by the time they reach high school, many have not. Difficulties

are especially common in the areas of listening, note-taking, test-taking, time management, and organizational skills," (Polloway *et al.*, in Lambert and Nowacek, 2006). Students with learning challenges such as depression, attention – deficit disorder (ADD), or anxiety may have additional difficulty mastering material. There are several skills that all students should try and adopt. A teacher must be willing to take time away from the curriculum to ensure their students have a routine and are following it.

There are various steps a student can take to ensure they are maximizing their class and study (at home) time. Encourage students to use their class time to work on their homework as their learning efficiency is likely to decrease at nighttime. Students should select a quiet study area at home that is relatively free of distractions. Teachers can encourage such behaviors by reviewing and testing the class on these concepts. Teachers should reserve time in class for recording the homework assignment into a planner or specific notebook. I have found that my students are more likely to record the assignment if it is given in written form. I make a point of providing an overhead with instructions or a paper handout for all non-routine homework assignments and projects. Most students who would otherwise fail to record the assignment will faithfully embrace the copying procedure. Along with paraphrasing and summarizing, many students find it hard to identify the gaps in their understanding (Lambert and Nowacek, 2006). Let your students know that the first step to learning any concept is to identify which part of the concept is unclear. Work with the students to explain their reasoning, brainstorm questions before tests, and express their confusion in specific oral and written terms.

Taking notes is a skill that all my students struggle with and I have made it a disciplinary issue because it is this critical to success. Even students who are failing will ignore directions to take notes and I have begun to address this as insubordination. My rule of thumb is that a student should not need to be reminded twice that s/he should be taking notes. I make it clear to all my students that taking notes is a basic expectation in my classroom along with sitting up straight and giving your attention to the teacher. I encouraged my students to evaluate their note-taking skills, provided them with pointers, and then assigned the students to take notes from various sources such as a film or written and animated internet sources. I structured an entire lesson around this objective. By taking time to emphasize the importance of note-taking, I was able to observe a variety of note-taking formats. While individual styles will vary, the Cornell note format has been highly popularized as a proven and effective tool for taking

comprehensive notes. Similar lessons are in order to teach my students how to paraphrase, summarize, and thus avoid plagiarizing the text book or other sources.

Any subject can be described or reflected upon in a written form, and such skills are central to survival in today's highly literate society. A teacher can reinforce grammar by assigning a paragraph for the class to correct (I do this as bellwork). This can be done as a group as not to penalize the students that cannot identify the grammar mistakes. Many lessons are available to address this problem. Collect student notebooks or planners regularly to ensure that they are recording their assignments and dividing their paper by subject. Grading the completion of such tasks provides a simple incentive and reinforces positive behavior. Such assignments should be organized in a way that makes for rapid and efficient assessment or may soon become a burden on the teacher and consume instruction time. In subjects like History and Biology, the emphasis is commonly on retaining information and relating a set of concepts. Students are challenged when asked to answer questions or create summaries of these formal texts. While summaries help a student internalize the information, the teacher must reinforce how to complete such a summary to avoid sheer plagiarism.

Regardless of your subject area, teachers are burdened with a curriculum that stretches a mile wide and an inch deep. However, solid study skills and a strong reading and writing foundation are crucial to ensuring the success of your students. A teacher cannot afford to ignore their students' lack of study skills. Depending on the educational backgrounds of you children, such negligence will only solidify the failure of many students. This is why improving basic reading, writing, and organization skills must be prioritized highly.

Jeremy Fiel
EDSE 646
December 9, 2006

Motivating Factors for Science Students in a Mississippi Delta High School

I gave a motivational inventory to the students I teach chemistry and physical science to at a high school in the Mississippi Delta. I was curious about motivating factors in the lives of the children due to the total lack of effort that many of the students have shown in my classes. Specifically, many of the students seem to have a total lack of motivation to succeed in school, and many of those who are motivated seem to be motivated solely by grades and graduation. Students commonly fail to complete or even attempt class-work and homework, and it is clear from test scores and from several students' own admission that study time is not utilized at home. Many students who do complete their assignments prefer to copy and memorize answers because the grade is the bottom line and the primary motivator. By taking a motivational inventory of all of my students, I hope to identify new ways of motivating my students and avoid motivators that do not fit my students.

I also wanted to compare the motivators for students in my chemistry classes to those of my physical science students, and to compare the motivators of all my class periods. I find that my chemistry students are generally older, more successful in school, and more likely to complete assignments than the younger physical science students are. One problem with this survey is that several of my physical science students would not even attempt the motivational inventory. This is typical behavior for many of these students. Unfortunately, I have no way of assessing their academic performance or their motivation when they repeatedly choose not to participate in class.

The motivational inventory is attached following this article, but I will summarize it here. There are 13 categories in the inventory, each of which has 6 statements. The 13 categories are social concerns, self-expression, money, recognition, achievement, leadership, challenge, interpersonal relationships, variety, values, independence, creativity, and personal interests. A total of 111 motivational inventories were completed by my students. 25 physical science inventories were completed compared to 89 chemistry inventories, while 3 students are in both classes. Their data was analyzed in both categories.

The student must score each statement in a category from 1 to 5 based on how important it is to them in terms of motivation (1 would mean least important and 5 would mean most important). The scores of the 6 statements are added together to determine the total score for each category. Students then ranked their motivators in order from highest score to lowest score. The top 2 and bottom 2 motivators for each student were recorded and analyzed. Data Table I shows the number of times each motivator was in a student's top 2 or bottom 2 motivators. The data is organized by class period.

Data Table II shows the data for all 4 chemistry classes compared to both physical science classes, as well as the total of all my classes. The 3 most common top motivators and bottom motivators are in bold in this table.

Table I. Data By Class Period

	1st Chemistry		2nd Physical Science		4th Chemistry		5th Chemistry		6th Physical Science		7th Chemistry	
Motivator	Top 2	Bottom 2	Top 2	Bottom 2	Top 2	Bottom 2	Top 2	Bottom 2	Top 2	Bottom 2	Top 2	Bottom 2
Social Concerns	1	13	1	4	0	6	1	8	0	7	0	1
Self-expression	3	4	4	2	2	3	4	1	1	2	3	2
Money	1	9	4	1	4	5	4	2	1	1	2	5
Challenge	5	6	1	5	0	14	0	6	2	2	2	9
Interpersonal Relationships	6	1	2	2	3	0	0	3	1	1	1	1
Variety	0	6	2	3	4	10	0	7	2	2	4	7
Values	6	3	1	4	1	0	3	1	2	3	2	6
Independence	7	1	4	3	7	0	4	1	4	0	6	1
Creativity	4	2	3	4	6	3	1	5	1	1	6	1
Recognition	11	1	4	1	12	1	3	2	2	0	3	0
Achievement	15	1	10	0	9	0	8	0	6	2	9	0
Leadership	8	3	2	1	3	2	3	3	3	1	3	3
Personal Interests	2	4	0	3	3	4	4	0	2	0	4	0

Table II. Motivators by Class and Total Data

	Chemistry		Physical Science		Total	
	Top 2	Bottom 2	Top 2	Bottom 2	Top 2	Bottom 2
Social Concerns	2	**28**	1	**11**	3	**39**
Self-expression	12	10	5	4	17	14
Money	11	21	5	2	16	23
Challenge	7	**35**	3	**7**	10	**42**
Interpersonal Relationships	10	5	3	3	13	8
Variety	8	**30**	4	5	12	**35**
Values	12	10	3	**7**	15	17
Independence	**24**	3	**8**	3	**32**	6
Creativity	17	11	4	5	21	16
Recognition	**29**	4	**6**	1	**35**	5
Achievement	**41**	1	**16**	2	**57**	3
Leadership	17	11	5	2	22	13
Personal Interests	13	8	2	3	15	11

First, I will discuss the total data accumulated from all my classes. The most frequent top motivators for my students were achievement, recognition, and independence. Achievement is an intrinsic motivator for which a student wants to do good work or to succeed for their own satisfaction. Recognition is an extrinsic motivator, where students desire praise or acceptance from others. Independence is associated with

students asserting control over their own work. It isn't surprising that adolescents would be motivated by recognition and independence. The most frequent bottom motivators were challenge, social concerns, and variety. Overall, the same pattern was found in both my chemistry and physical science classes, although values was an additional bottom motivator that was frequently reported in physical science students. The fact that social concerns are a bottom motivator is understandable for adolescents, but I was surprised that variety was a bottom motivator. I expected my students to dread routine activities, and based on their comments, they do. However, it seems that adding variety to the situation does not increase their motivation. Unfortunately, challenge was the bottom motivator for most students. In classes where hard work and critical thinking are required, students who are not motivated to meet challenges are not likely to succeed.

I would also like to compare the data of each class period and make some general observations about these classes. My most successful classes are 1st, 4th, and 7th period chemistry. After four months of teaching, these classes have been more likely to complete assigned work and to make better grades in my class. My fourth period class in particular stands out as the most responsible class in terms of completing assignments. Achievement and recognition were the top motivators for these classes, but there weren't really any anomalies in these classes. My 5th period chemistry class along with my 2nd and 6th period physical science class have shown much less responsibility, motivation, and success in my class. The physical science classes seem especially apathetic, and the majority of students in them are failing. Interestingly, recognition was not a top motivator for any of these 3 classes. That might suggest that these students don't seek to please others such as peers, teachers, or parents. It also may be a reflection of the lack of

recognition these students are used to receiving. Challenge was also a low ranking motivator in these classes, although it was low in all my classes.

One shortcoming of this survey is that several of the extremely low-performing students (who rarely complete their assignments) did not even take the inventory. The inventory would also have been more informative if free response questions were included. It is not possible to determine whether or not the student has the same interpretation of the statements on this inventory, and a section of free response questions may have been more informative.

In addition to learning what motivates my students, this inventory can be very useful in the classroom. First, it serves as a tool for metacognition and allows the students to analyze their own motivation. It can also be used to remind students of what they consider important motivators to succeed when a situation arises where a students may be lacking in motivation. Reminding them of reasons that were important to them at one point in time may help to motivate the student. Finally, for the teacher, there are several ways to use this inventory. Consider the top motivators of these students when planning lessons and managing the classroom. For instance, introduce a lesson or an assignment in a way that allows students independence in the way they solve the problem or meet the objective. Make them feel that they have ownership of the classroom and of their own education. Since recognition is such a high motivator, provide students with praise and display their work. Have students set goals and chart their progress toward achieving them.

Motivating adolescents to succeed in the classroom is difficult. I know from experience. With some insight into the factors that motivate the students the most, as

well as the least, hopefully I can get the most out of my students. As they say, you can lead a horse to water, but you can't make it drink. The trick is to make it thirsty.

WHAT MOTIVATES YOU?

Most important ←→ Not important

STATEMENTS	5	4	3	2	1
I like to help people.					
I like to plan for other people's welfare on a large scale.					
I like to feel I am useful and needed.					
I like to be involved with groups that sponsor activities to help others.					
I like to use my energies to help make the world a better place to live.					
What others think of what I do is important to me.					

Add the values of all the checks to determine your motivation from

SOCIAL CONCERNS. Total Score:

Most important ←→ Not important

STATEMENTS	5	4	3	2	1
I like to do things that help develop my talents.					
When I choose a career, I will be happier if I am in non-confining work that will tap my abilities to the fullest.					
I think a lot of my talent will be wasted if I don't find just the right job.					
Being able to develop my abilities is very important.					
I have a lot of ideas and am eager to try them out.					
I work best without rules and limits.					

Add the values of all the checks to determine your motivation from a desire for

SELF-EXPRESSION. Total Score:

Most important ←→ Not important

STATEMENTS	5	4	3	2	1
Material things are very important to me.					
When on my own, I plan to maintain a comfortable style of living.					
I want to have as high an income as possible & will pick a career accordingly					
I want to be financially independent from my family.					
After graduation, the career I select will be based on salary.					
I will measure my worth as a person by how much money I earn.					

Add the values of all the checks to determine your motivation from a desire for

MONEY. Total Score:

Most important ←→ Not important					
STATEMENTS	**5**	**4**	**3**	**2**	**1**
Easy work bores me.					
If a difficult problem arises, I have the urge to tackle it.					
Without challenging work, I feel frustrated and unfulfilled.					
I like working on assignments requiring learning and effort.					
I require intellectual challenges that stimulate my thinking.					
I prefer to work on new, unexpected projects rather than do the same job each day.					

Add the values of the checks to determine your motivation from activities offering a

CHALLENGE. Total Score:

Most important ←→ Not important					
STATEMENTS	**5**	**4**	**3**	**2**	**1**
I want to be with and work with people who share my interests.					
I like to be a part of a team effort.					
The isolation of working alone depresses me.					
I like to meet new people.					
I enjoy meeting & talking to people who've had interesting experiences					
I like to discuss ideas, thoughts, and feelings with others.					

Add the values of the checks to determine your motivation for interest in

INTERPERSONAL RELATIONSHIPS. Total Score:

Most important ←→ Not important					
STATEMENTS	**5**	**4**	**3**	**2**	**1**
I welcome changing activities and changing roles.					
I enjoy a variety of tasks rather than doing just one thing.					
I can give time and energy to more than one thing at a time.					
I dislike routine activities and thrive on variety.					
I am not afraid of new places or people—they excite me.					
I can keep details of many activities in my head.					

Add the values of the checks to determine your motivation from activities offering

VARIETY. Total Score:

Most important ←→ Not important					
STATEMENTS	**5**	**4**	**3**	**2**	**1**
I believe that hard work builds character.					
We all have a responsibility to work toward a better world.					
Work gives me a sense of purpose.					
I would never compromise my values for personal gain.					
I like to be involved with people and groups that I respect.					
I care about the way my life affects the people with whom I have contact, as well as society as a whole.					

Add the values of all the checks to determine your motivation from issues of

VALUES. Total Score:

Most important ←→ Not important					
STATEMENTS	**5**	**4**	**3**	**2**	**1**
I want the feeling that I can depend on myself entirely.					
I want some part of my life to be independent from the others with whom I share my life.					
I like to do things on my own without a lot of orders or direction.					
I want to use my capacity for independent thinking and action.					
I like being responsible for a project from start to finish.					
My friends and family will respect my ability to support myself.					

Add the values of all the checks to determine your motivation from

INDEPENDENCE. Total Score:

Most important ←→ Not important					
STATEMENTS	**5**	**4**	**3**	**2**	**1**
I have the ability to offer ideas and suggestions in many situations.					
I like to come up with new solutions to old problems.					
I tackle problems that others prefer to avoid.					
I like to try out my original solutions rather than rely on the usual ones.					
I like to develop better ways to get things done.					
When I use my creativity, it gives me a good feeling about myself.					

Add the values of all the checks to determine your motivation from opportunity to use your

CREATIVITY. Total Score:

Most important ←→ Not important					
STATEMENTS	**5**	**4**	**3**	**2**	**1**
I like to have my work appreciated by my family and friends.					
I want to be acknowledged by others in my field.					
I want my job to be with an established, prestigious company.					
I want a job that is glamorous in the eyes of others.					
The title that I might have on a job is important to me.					
Having the respect of the people who know me is important.					

Add the values of all the checks to determine your motivation for personal

RECOGNITION. Total Score:

Most important ←→ Not important					
STATEMENTS	**5**	**4**	**3**	**2**	**1**
I do not like to waste my time.					
When I do something, I like to do it well.					
I enjoy seeing the results of my efforts.					
I like to have a goal and then be able to work toward that goal.					
It is important that I be able to continue to learn and grow.					
I feel good when I learn from an experience I have had.					

Add the values of all the checks to determine your motivation from a need for

ACHIEVEMENT. Total Score:

Most important ←→ Not important					
STATEMENTS	**5**	**4**	**3**	**2**	**1**
I am a natural leader.					
I enjoy planning and organizing activities with my friends.					
I like to supervise the work of others					
I like to see things improve as a result of my efforts.					
My friends seem to respond to my ideas and suggestions.					
I am good at getting things going when others are getting bored.					

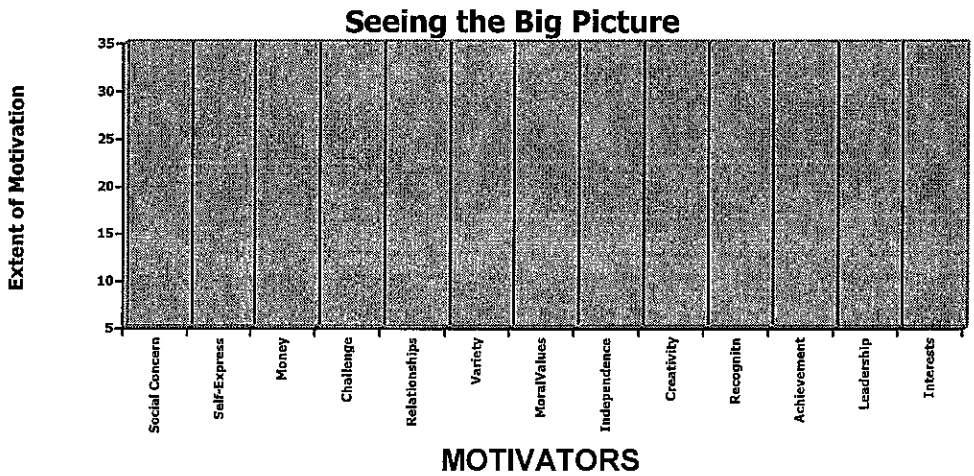
Add the values of all the checks to determine your motivation from a knack for

LEADERSHIP. Total Score:

	Most important ↔ Not important				
STATEMENTS	**5**	**4**	**3**	**2**	**1**
I want to organize my life around interesting things to do.					
I like to be so absorbed in my work that time goes quickly					
At the end of a day, I need to feel I have accomplished something.					
I like to throw myself into a project and become wrapped up in it.					
I am interested in a lot of different things.					
When I select a career, I need for it to be so interesting that I will even think about it when I am home from work.					

Add the values of checks to determine motivation from activities that match your...

PERSONAL INTERESTS. Total Score:



Plot your total score for each motivator on the chart. This chart will give you a visual representation of types of activities that motivate you the most.

MY PEAK MOTIVATORS ARE:

1) _____ 2) _____ 3) _____ 4) _____

What else motivates you? Think about how your motivators could affect your study habits, your choice of friends, your major, your attitude toward any jobs you may have held in the past, attitude toward possibilities of certain careers in the future, your preferred lifestyle, etc.

Can you see the connections?

The Impact of STDs in the Delta

By: Ashley Johnson

The HIV/ AIDS and the STD epidemic is affecting our country negatively and causing devastation. In light of this situation there have been many different prevention methods used to decrease the epidemic. The Greenwood Middle School is participating in these prevention methods by having their students attend an AIDS/ HIV and STD rally. The rally was held at the local college, Mississippi Valley State University, located in Itta Bena, Mississippi. The rally provided the students with statistics and the facts about AIDS/HIV and other STDs. The program also included free HIV/ AIDS testing for the collegiate students and anyone who was of the appropriate age. The Greenwood Middle School students walked away with a better understanding of AIDS/ HIV and other STDs. They also learned the correct way to protect themselves from the possibilities of catching sexually transmitted diseases that are occurring all over the nation and in their backyards.

The Staggering Statistics.

The program provided the students with many statistics. An alarming statistic that stood out to me was that out of eighty-eight (81) Mississippi Valley students tested for STDs in the fall of 2006 sixty-six (66) of the students had a sexually transmitted disease. This statistic was shocking and over whelming. The program also told that 150 people in the Delta area are HIV positive. It also gave the statistic that more than 180,000 people in the United States are HIV positive and are unaware of it. The STD epidemic exists right here in Greenwood, Mississippi. Based on the 2003 Mississippi STD/ HIV report Leflore County, where Greenwood is located, reported three hundred and fifty-one (351) cases of chlamydia, one hundred and fifty- seven (157) cases of gonorrhea, five cases of syphilis, seven cases of HIV, and two cases of AIDS.

Did you know?

AIDS stands for Acquired Immune Deficiency Syndrome. It is a disease caused by the virus HIV, Human Immunodeficiency Virus. HIV attacks the immune system, the part of our bodies that protect us against infections and illnesses. People with AIDS become very ill and die because their bodies can't fight off diseases.

The program was very beneficial to the students. The program informed the students about the basics of HIV and AIDS. It provided a definition of the virus and disease and informed the students of the ways to contract the virus. The program provided the students with the proper prevention techniques. The program informed us that the group at the highest risk of contracting AIDS is young African American women. In 2003, over sixty-six percent of women living with HIV/ AIDS were African American. (1) As HIV incidence rates in the African American community increase, so does the risk for HIV transmission among African American women. This is because they are more likely to establish sexual relationships within their ethnic group. African Americans now represent the largest group of young people infected by HIV. (2) For young African American ages twenty to twenty- four, HIV infection has been cited as one of the four leading causes of death. (2) Higher rates of sexually transmitted diseases (STD) are also an issue of concern for young African American women.

The impact of HIV/ AIDS on Delta communities is far-reaching. Prevention is the key to decrease the STD epidemic that continues to harm the people of our country. The program's main focus was prevention. I think that the students learned a great deal from the program and I would recommend it to other schools. The program is an annual event that is held at the beginning of December. For more information please contact Mississippi Valley State University.

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julia Keith
EDSE 646- Mattox

The Importance of Active Learning Strategies to the Teaching of Science

Active Learning

Active learning is the most student-centered, student-involved method of teaching that a teacher can employ. What it boils down to is hands-on learning in that the student is manipulating the material and knowledge to be acquired within the classroom. There are a multitude of different strategies that one can use to guide the students into active learning, some of which are detailed below.

Why we should use active learning

The most obvious reason for using active learning strategies is that the students learn more when they are engaged in the learning and kinesthetically involved in the lessons. With our students, active learning strategies are especially important because our kids, for the most part, are not going to learn using traditional methods of teaching (ie: Lectures). Active learning strategies have been proven to result in increased retention of material in a wide range of students from varying backgrounds as well as promoting an exciting, challenging and interesting classroom environment. Active learning strategies also provide an essential tool to the teacher: differential instruction. In many ways the active learning strategies that one can employ in the classroom, allow for differential learning as well as collaborative peer and group learning opportunities.

Why active learning is so important to the science classroom

Active learning goes beyond laboratory investigations in the science classroom. Much of the curriculum in a high school classroom, especially for introductory classes, traditionally involves many instances of memorization of facts, concepts and vocabulary. For students who have a difficult time learning from lecture-format classes, have short attention spans and difficulty memorizing large amounts of information, active learning strategies aid in the acquisition of this knowledge. These strategies allow the students to manipulate the material, have greater interaction with the instructor and aid in much greater recall of information. Again, differential instruction is a very important tool especially in the science classroom specifically because science, much more so than math for instance, requires a student to think abstractly and to apply their knowledge in many different, challenging contexts.

Why active learning strategies are especially applicable to disadvantaged students

Including active learning strategies in teaching disadvantaged students is especially important. For these students, their attention is severely divided between their home situations, outside employment that may extend far into their evenings, school pressures, peer pressures and the every day pressures that occur from living in poverty and poverty stricken areas. With active learning employed in the classroom, students have a greater chance of learning the material but also being able to apply the knowledge that they have gained. In addition, using these kinds of learning tools allow students to focus on work in the classroom whereas other teaching methods may lead to much lee-way in terms of where the students are focusing their attentions; either on the material or on outside complications.

Active Learning Strategies

- Writing
  - Journal assignments
  - RAFT assignments (Role, Audience, Format, Topic)
  - Note sheets with blanks for the students to fill in and diagrams to complete during any required lecture time
- Think – Pair – Share
  - Pose a problem, give the students a time limit to think about the problem,then they pair up and share their thoughts
- A-Z Recall
  - Students are given a topic for which they have to recall 26 things – each of the topics beginning with a letter of the alphabet
- Learning Cards
  - Some sort of visual representation on the front with explanation in writing on the back
  - Also to be used as study aids
- Games
  - Crossword puzzles, Jeopardy games, Scramblers, Bingo are all good games to adapt with content-specific material or vocabulary acquisition
- Skits and Role-playing
  - Students are given a scenario or topic for which they have to create a role-play or small skit that covers the material

EDSE Science Methods
Dr. Maddox
Article:12/9/06
Lisa Shaffren

Ideality and Reality: Reconsidering the merits of self-determination theory in education (as per a senior thesis) after one semester teaching in a critical needs school district

Self-determination theory, a prevalent element of motivation theory and the primary body of work produced by prolific educational psychologists Deci and Ryan (Deci & Ryan, 1985; 2000) , defines several terms that provide a framework for approaching motivation. Intrinsic motivation is roughly described as willingness to participate in an activity based on spontaneous feelings of enjoyment or well-being that can be derived from participation therein. It is based on interest, presumably on both the inherent tendencies of people as a whole and of individual qualities.

Extrinsic motivation is strongly associated with reward and punishment. A third kind of motivation, internalized extrinsic motivation, is said to occur when something external takes on particular importance to an individual based on his or her assessment of it's value to his or her life and goals. Self-determination theory also includes a discussion of other kinds of motivation, but these are not as immediately relevant here.

Teacher corps presents several ideas relating to motivation, though these are sometimes not discussed in light of motivational theory. Firstly, rewards and punishments are a standard ingredient in the Mississippi Teacher Corps recipe for classroom management. We've had countless discussions about different variations and suggestions for implementing a

system that includes these two primary elements. On the scale of intrinsic, internalized, or extrinsic motivation, rewards and punishments clearly fall in the extrinsic motivation category.

On the other hand, another technique frequently discussed during teacher corps training and discussions is use of inductive reasoning activities and other brands of explorative learning. This kind of learning activity relies heavily on the student's own thought process. Such activities are, if not reliant on intrinsic motivation, then at least more effective if there is genuine student interest. Similarly, students tend to take interest in discovery facilitated by their own thought processes. Intrinsic motivation and inductive learning seem to go hand-in-hand.

In a strategy similar to inductive learning techniques, social constructivism has also been presented as part of the content material for the science methods class both through case studies and through textbook content. The predominant notion behind the theory of social constructivism is that the student constructs knowledge based on his or her own investigations and explorations. Again, this approach is very student-centered, and requires not only that the student has an active thought process during a lesson, but that the student actually *constructs*, invents the knowledge independently. Clearly, some degree of intrinsic motivation is important for students to move through a lesson designed based on social constructivist theories. To summarize, it is difficult to force inquisitive thought.

To what extent, exactly, should teachers be pursuing intrinsic motivation for our students through our lessons, to what extent should teachers be aiming for internalized motivation, in which we encourage student to make the lessons we teach important to them and try to explain their importance, and to what extent should teachers be using techniques that are based on extrinsic motivation in our classrooms?

According to the definition of intrinsic motivation as motivation based on spontaneous feelings of enjoyment or well-being, any activity that is designed to be fun is in fact appealing to intrinsic motivation. Designing fun, interesting lessons is an established element of the teaching process, as is, then, intrinsic motivation.

Similarly, the set, by definition, includes an element that attempts to catch the student's attention and relates it to the student's own life. In other words, the set is used to establish the importance of the lesson in the student's life, thereby appealing to a sense of internalized motivation.

Finally, there are grades. Clearly, the use of grading, another conventional and heavily utilized teaching strategy, motivates the student via extrinsic motivation. Grades are a mark, a reward or a punishment, in one sense.

Various types of motivation are clearly already ensconced in the educational process. The type of motivation that is pursued most heavily in the classroom, however, is based largely on the instructor's design, much like choice of other strategies and approaches. Motivation is effected by teaching style and, moreover, by the specific goals of the lessons or even the class itself. If the purpose of a class is to teach critical thinking skills, perhaps a more inductive style learning motivated by intrinsic interest in class activities (wherever it can be established) is the best way to go. If, however, the goal of a class is to strictly convey a set of information, like the timeline of American history with the goal of passing a state exam, perhaps it is appropriate to sacrifice some degree of intrinsic motivation for rewards and punishments that can move a student through the curriculum.

In terms of which is better for the student, there is some conflict between the ideality and the reality. Ideally, students would be intrinsically motivated to make the most of their various

intelligences and discover and develop their strengths, and extrinsic motivated would be unnecessary. In reality, extrinsic motivation is often necessary to get students to participate in lessons. Actually, extrinsic motivation, such as a reward or a punishment often seems like just the thing needed to establish focus on an activity; intrinsic motivation may even take over at some point.

In conclusion, all three major types of motivation- intrinsic, internalized, and extrinsic- have important roles in the classroom. Extrinsic motivation may in many cases be the most effective way of directing student attention, but internalizing motivation by making it relevant to the student's life is also essential. Intrinsic motivation is ideal, and seems to be especially important for activities that require inductive reasoning or social constructivism, but may be more difficult to establish. Also, students may discover that they are intrinsically motivated after other kinds of motivation are already in use.

Depending on classroom goals, appealing to various blends of the three kinds of motivation may the most effective approach to choosing motivational strategies.

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Enabling students to follow directions in a middle-school science class: challenges faced, lessons learned, and unanswered questions

By Lisetta Shah

As a first-year science teacher, one of the most struggling aspects of teaching has been getting my students to understand and follow directions. Before I started the school year, it had never occurred to me that directions would present a problem, but the issue of following directions is perhaps my greatest frustration on a daily basis. The problem is not so much that students disregard directions, but that they ask me to repeat directions that I think are abundantly clear. Sometimes, they are honestly confused, sometimes, they were simply not listening, and sometimes, they do not want to do more work than they have to and would rather try to make me explain things to them so that they do not have to bother reading written directions, or are trying to wheedle me into giving them the answers so that they do not have to work the problems themselves. It is because of the latter reasons that I often become frustrated when a student does not understand directions and merely needs more clarification.

My very first experiences with this issue started within the first few days of school. On the first day, I had all students complete a student information sheet, asking them basic questions such as parent contact information, extracurricular activities, hobbies, etc. I had several students who did not know what hobbies were. My first serious glimpse at the issue of following directions came several days later, when I had my students complete a learning style inventory. The basic format was that students read a series of statements and decide whether each one was true about themselves often, seldom, or never. After completing the questions, students tallied up points according to a chart and used point totals to determine whether they were visual, tactile, or auditory learners. In retrospect, I should have typed up some of my own directions to accompany the ones given, since the system for tallying points was a bit complex and I had to read the directions carefully myself before figuring out what to do. I was giving the inventory to students after they completed a practice exam, so rather than giving directions to the whole class at once, I ended up handing out the survey to individual students as they finished their exams, and in almost all cases, talking to the student after he or she looked at the survey and said, "I don't get it." One problem with the survey that I had not anticipated was that many students did not know the definition of the word "seldom." The issue of vocabulary often complicates the task of giving directions, especially since it is so hard for me to predict what vocabulary words my students will or will not know. For instance, I gave a warm-up question to students that asked them to name some qualities of an animal of their choosing that lives in the area. To me, this was a simple and straightforward prompt, but a surprising number of students told me they didn't understand. As it turns out, all of them knew what the word "characteristics" meant, but did not know the synonym "qualities."

I have had several whole class periods more or less lost because I gave a lecture and then had students do some practice to reinforce the main points of the lecture, but I ended up spending almost the whole practice time trying to explain to students what they were supposed to do. My experiences have given me some ideas of do's and do-not's for giving directions, though I still struggle with the issue.

One lesson that I learned early on was not to give directions and assignments that are too open-ended, at least not for the seventh grade students I teach. I had students design lab posters one day, and diagram a plant cell free-hand another day. I provided ideas and suggestions, but left many of the specifics about representation up to the students. As a result, a number of students spent the whole period looking at a blank sheet of paper and debating with one another what they should do. I remember one student looking at my plastic model plant cell (which did not have any labels on it), replicating all the shapes and colors in his notebook, and then asking me, "what do I do now?" I'm working on giving students more structure in any assignment, and need to go to lengths that sometimes seem ridiculous to me. For instance, if I have students use concept maps, I have learned that I should give each student a pre-printed blank concept map to fill in, because some students will otherwise spend the whole class period trying to make perfect circles and throwing out attempt after attempt that looks a bit too messy or improperly sized.

Another lesson I've learned is to hold students accountable for listening to and understanding directions. Whenever possible, I will give students a written set of directions, have them read the directions aloud, paraphrase them myself, and then ask for any questions. If I am giving verbal directions (and I will usually try to have the directions written on the board behind me as well), I will begin by warning students that I am not going to repeat myself and that they need to listen closely. These efforts make it somewhat easier for me to discern which students were actually confused about directions that I gave and which were merely not paying attention when I gave the directions. If I go through these measures and a student asks, "What are we supposed to be doing?" I will respond by telling them to read the board or ask someone who was paying attention. This is one of my strategies for combating laziness among my students. I try to write directions on the board as much as possible so that if students ask me a question that I have already answered, such as, "What's today's date?" or, "Do we have to write questions and answers?" I can point at the board without even opening my mouth. In part, this is a measure to preserve my own sanity, since I find it infuriating to have to repeat a particular phrase over and over again to inattentive ears. I can also try to force students into asking clarification questions immediately after I give directions so that I can more easily pick out the students who simply tuned me out while I was giving directions.

In addition to giving directions on any given assignment, I now try to also include an example that I have done for the students. This does not have as much of an effect in eliminating confusion as I had expected or hoped, and I am still at a loss to understand why. I suspect that at least part of the issue is laziness; the students will see the example that I have done, but would rather try to have me do the second problem as well by telling me that they are confused than think about how to follow the example and apply it to a slightly different situation.

The biggest challenge that I still face is in writing directions that are clear enough for my students, particularly when more challenging scientific concepts are involved. I still have difficulty anticipating what will make sense to them and what won't. I have realized that at least part of the problem is that as a Massachusetts native teaching in the Mississippi Delta, I do not yet have a good feel for what language is most familiar to my

students in an academic setting. My hope is that, with time, I will be more adept at predicting what language will resound with my students.

I also still struggle to understand why an individual student still has a question after I give directions. Did she not understand a particular phrase that I said, did she tune me out, or would she rather just hear me talk than try to do a little bit of reading and thinking to answer her own question? Because I cannot always answer this question, I suspect that I sometimes am too generous in giving a student help, or become too easily frustrated with a student that I assume is not trying. Again, my hope is that experience will teach me how to better read my students.