Maximize Your Potential: Survey Reading in the Sciences

By

Dr. Raymond Hatfield

TABLE OF CONTENTS

Maximize Your Potential: Survey Reading in the Sciences

by

Dr. Raymond Hatfield

INTRODUCTION

As an older nontraditional college undergraduate student, I had the opportunity to observe incoming freshmen students struggling through their first year of college. I noticed that many of the students were having difficulties within general and especially within the science related courses. Based on these observations, I concluded that high school students were not being prepared for the rigors of college. I am sure there are many reasons for this lack of preparation. For example: high school educators are so focused on teaching to the test that the idea of preparing students for college becomes secondary; or, students just do not understand the importance of studying and preparing for exams. Based on my personal experiences, students from 30 years ago seemed to be better prepared for college as compared to the students of today. Furthermore, in a 2007 National Curriculum Survey for the ACT, college professors stated that 65% of states prepare students very poorly for college-level coursework.

I have witnessed students struggling to the point of frustration; when they would go to their professors for help, they were told that college may not be the right fit for them. As a result, many students made the decision to drop out because they did not feel as though they were adequately prepared for college; truthfully, these students were not prepared.

During my years in college, I worked several jobs to support my family, which meant that I had very little time for study. I knew in order to survive the rigors of college, I needed some type of study technique to be successful. After spending several months researching libraries, reading every kind of self help book, I finally developed a study technique that made a difference for me.

As mentioned earlier, I used this method during my college years as a survival tool. However, this study technique is not restricted to the college student. In fact, this process should be introduced to students during the middle school years.

It is important to understand that this study technique is much more than a process. The earlier that a student begins to use the program, i.e., middle school, he/she may improve how their brain functions and consequently improve his/her cognitive ability. While introducing this concept to students, I compare it to lazing the brain for learning; which, may be compared to lazing a stick of dynamite. Lazing dynamite gives it an exponential amount of explosive power. This process may provide the learner an important advantage to reading, organizing, and retaining important information.

The initial development of this survey process occurred prior to the Internet and "online connectivity." This meant that I spent several months researching libraries to find some type of methodology to help with my quest of surviving college. I read all of the self-help, power reading, and memorization technique books that were available. It was not until I came across a book written by Robert Aukerman that gave me the inspiration for developing a technique to help me prepare for difficult scientific courses.

This survey process was developed to help me survive those arduous college courses. Little did I know that this methodology would also follow me through my graduate level courses, and into my classroom. I refer to this method as the "survey process." The survey process is centered on brain based learning; because of this, it is important to understand the processes of language and how the different learning styles are addressed within this study skill. The survey technique consists of reviewing the textbook, identifying topics, writing the topics down in an organized manner, bringing the survey to the classroom to take notes, asking clarification questions, studying the survey, and preparing for tests.

History of Reading

Background of Whole-Language and Phonics

Whole-language is a term that was developed by educators. Goodman and Goodman (1981), Harste and Burke (1977), and Watson (1989) began using the term whole-language to reference how English-speaking children learn to read. They have stated that language is whole and that it should not be fragmented into parts, hence the name whole-language. They also said that using phonics, grammatical patterns, vocabulary lists and other educational theories actually destroys the concept of language. Harste and Burke describe three different theories of reading: the first theory includes Goodman's (1967) description of whole-language which defines reading as a psycholinguistic process where the reader interacts with texts; the second theory is called phonics, which describes reading as turning letters into sounds; and the third theory is called skills, which includes phonics, word recognition, and comprehension skills. Harste and Burke stated that readers interacting with texts (using the whole-language theory) are able to predict words in text by using sample cues from the semantic, syntactic, and graphophonic systems, and along with their worldly knowledge of language are able to derive meaning from context.

Samuels and Kamil (1982) suggested that whole-language was introduced as an effort to supplant the traditional phonics method for teaching children to read. Whole-language allowed the classroom teacher to teach large groups of children to read based on the concept of immersion (Venezky, 1984).

During the mid-to-late 1970s, Goodman's (1992) insights into reading as a psycholinguistic process spurred the interest of other reading specialists for whole-language. Also, during the 1970s Goodman (1989) and Watson (1989) started a whole-language teacher support group called Teachers Applying Whole-Language.

According to Vail (1991), prior to the introduction of whole-language, the traditional phonics method was used. The phonics method requires intensive one-on-one instruction and was not considered a feasible option for accommodating large class sizes. During the 1950s, the Dick and Jane readers and books such as Dr. Seuss's The

Cat in the Hat were based on the whole-word theory. The goal of these books was to get children to become familiar with a limited set of simple words. The book Why Can't Johnny Read, written by Flesh (1955), changed the direction from whole-language back to phonics. Flesh, who was not an educator much less a reading specialists had limited effect on reading instruction. However, Flesh's book stirred the interest for many Americans and brought the processes of reading into question. Again, during the 1980s the whole-language ideology began to resurface, replacing the phonics approach and has remained until present day. Lemann (1997) has stated that because of state-mandated "assessment," the pendulum has begun to swing back to the traditional phonics approach. Lemann also stated that children trained in phonics perform better on assessment tests.

Conflict Between Phonics and Whole-Language

Some phonics advocates would consider whole-language to be in direct conflict with the phonics approach for learning to read. Phonics-based programs require students to "decode" unfamiliar words by sounding them out. Whole-language advocates suggest that the phonics programs teach letter-sound associations that are separate from meaningful context and this requires a large amount of time and training for both students and teachers (Lemann, 1997).

The whole-language philosophy emphasizes whole-word recognition skills. Vail (1991) suggests that the typical whole-language kindergarten classroom may involve a teacher's reading aloud to his or her students while pointing to oversized versions of children's books. The teacher points to each of the printed words as he or she reads to the children and after several readings from the same book, students begin to recite the words with the teacher. Using whole-language, children begin to recognize words in context versus the phonics approach, which requires children to be able to decode text. The whole-language approach also incorporates literature "across the curriculum;" whereas, the phonics approach isolates literature into separate language arts programs.

Vail (1991) suggests that the followers of both ideologies believe that children have the natural ability to understand spoken language, and the concept of

phonological awareness may be the common thread that has the greatest effect on student achievement. The ability for children to translate auditory sounds via the arcuate fasciculus (an area within the human brain responsible for connecting all of the regions of the brain that are involved in language processing) into language, and then derive understanding from this process may be the critical factor that bridges the whole-language and phonics ideologies together (Crick, 1994).

Vail (1991) explains that reading has always been a critical component to consider when school leaders are attempting to improve the overall test scores of their students. With new technologies now available, educators have a wealth of innovative programs that they can use in the classroom to supplement instruction. These programs may provide an opportunity for educators to settle the argument about which educational ideology should be used to teach reading. Is it possible for educators to overcome their differences and embrace both whole-language and synthetic phonics? Vail stated, "Proponents of both whole-language and phonics want children to read and write easily, accurately, and joyfully..." Vail also stated, "The goal is too important to be compromised by factionalism. We need to move from rival turf to common ground."

The Process of Language

Learning is not fixed throughout life; it remains in constant development as a person learns and grows. To fully understand the concept of the "survey" process, it is important to understand what occurs in the brain when a person reads. Language involves three basic components hearing, speaking, and sight. It is also important to understand the importance of language and the importance that is has on the processes of learning.

Hearing- Sound travels through the air as vibrations. The vibrations are transformed into electrical impulses within the inner ear; then, these electrical impulses are transmitted to the auditory cortex located in the temporal lobe. The electrical impulses pass through the arcuate fasciculus, a pathway that connects a large network

of interacting brain areas, such as the cortical regions of the brain, which are involved in language processing. This allows a person to hear sounds.

Speaking- Unprompted words start as thoughts and involve many different brain areas responsible for memory, emotion, and associations. These thoughts converge around the Broca's area through which we recall the memory of how to pronounce words and grammatical information. A message is then sent to the motor cortex, which controls all voluntary muscle movements. Then, a signal is sent to the tongue, lungs, and a larynx to produce spoken words.

Sight- Vision is probably the most amazing and complex processes of a living organism. When a person reads a word, light bounces off the page and enters the eye through the lens, projecting the image onto the retina, initiating a process through which light is transformed from chemical into electrical impulses through photoreceptor cells. From the retina the electrical impulse travels through the optic nerve, the optic chiasm, the optic tract, the lateral geniculate nuclei, and the optic radiations as it travels to the occipital lobe into the visual cortex. Electrical signals are passed through the brain, to the visual cortex. After arriving at the visual cortex the information about space, orientation, form, and color, is analyzed. From the visual cortex, information is sent to the Wernicke's area where language is understood and processed. After the Wernicke's area, the signal is sent to the Broca's area through the arcuate fasciculus. The Broca's area is the part of the brain that processes speech. From the Broca's area, information is then sent to the primary motor cortex where specific information about letterforms is passed on to other areas of the cortex for the integration of visual and auditory information.

The Arcuate Fasciculus

The arcuate fasciculus is a pathway that connects a large network of interacting brain area (including the Wernicke's and Broca's areas) involved in language processing. This completed process permits the reading of words to occur. The arcuate fasciculus allows for the integration of the auditory and visual information with other sensory information which allows for cognition, association, and word meaning. In other words, the brain requires many interacting parts to be successful with language. The survey process is designed to exercise all parts of the brain to enhance an individual's ability to learn and retain information. The goal of the survey process is to implement study techniques that will create and solidify neural connections within the brain. This process is referred to as long-term potentiation, or the actual physical changes within the structure of neurons. One thing to remember is that long-term potentiation does not occur quickly and requires a great amount of practice. Hence, the importance of using drill practice techniques.
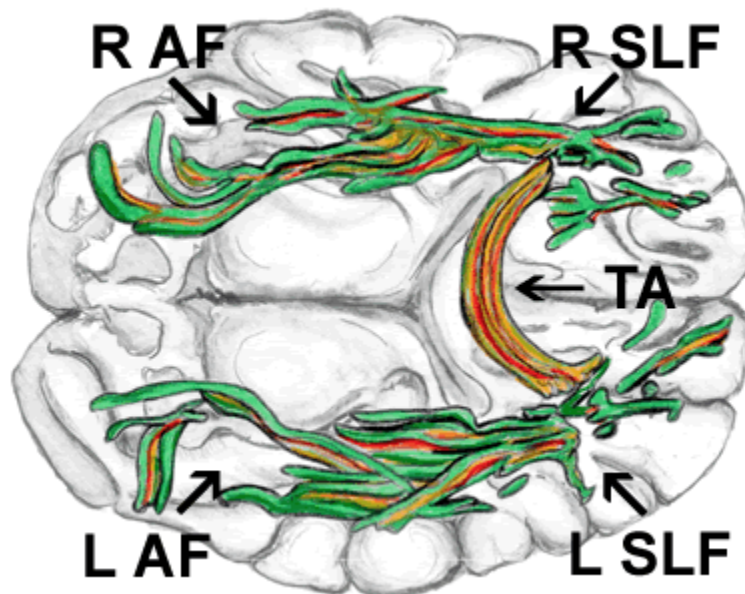
Figure 1: The arcuate fasciculus is the neural pathway that connects the posterior temporoparietal junction to the frontal cortex. Right arcuate fasciculus (R AF) and Left arcuate fasciculus (L AF). The right and left superior longitudinal fasciculus (R SLF and L SLF). Tapetum of corpus callosum (TA).

By looking at Figure 1, it is easy to see the importance of these neural pathways as they connect and involve all parts of the brain that are involved with language. It is the development of language skills that contribute to the degree of success that at student might have through his/her educational process. The inability of these regions to develop may have a direct correlation with conditions of dyslexia, autism, and other learning disabilities.

Aggression in Children

McVeigh (2001) wrote an article about Ryuta Kawashima (Tohoku University, Japan) in which he discusses the impact that video games may have on the development of the adolescent brain. Kawashima's research states that children who play video games may be more aggressive. He further states that playing video games may stunt the normal growth of the brain; therefore, causing these children to be more aggressive.

The frontal lobe of the human brain controls emotions, memory, and has the most influence on the decision making processes. The frontal lobe is also the part of the brain that influences self-control. The temporal lobe controls movement, vision, and speech. Kawashima believes that video games might over stimulate the temporal regions of the brain; therefore, impeding the development of the neural connection between the frontal and temporal lobes. The neural connectors between the left and right hemispheres, and the frontal lobe of the brain, occur dramatically during the ages of 11 through 21. Kawashima also states that this may be the primary reason why middle school students have the most difficult time in making the right decisions.

McVeigh's article goes on to say that Kawashima supports the use of arithmetic exercises and reading out loud. According to Kawashima's study, these activities will greatly enhance the frontal lobe. He also encourages children to play outside and actively communicate with others as much as possible.

The survey process, if used correctly, may aid in the process of developing the arcuate fasciculus to improve the connections between the temporal lobe and the frontal lobe. Other methods that may help improve the neural connections include playing musical instruments, and performing math problems that require conceptual knowledge. Conceptual knowledge is performing math problems with an understanding as to the why; which, leads to how the problems are solved. Solving math problems using conceptual knowledge involves communication between the temporal lobes and the frontal lobe. On the other hand, performing math problems based solely on using procedural knowledge may only involve the temporal lobe. The goal for improving the neural connections between the temporal lobes and frontal lobe is to focus specifically on conceptual learning.

Learning Styles

It is important to understand individual learning styles. In other words, what methods does a person use to get the maximum benefits that he/she will use to gain knowledge? For example, some people best learn by watching videos using headphones, whereas some people may not be able to retain information using them. Some people may require total silence while reading; while others may need to turn on a radio, or have some type of noise in the background. It will be extremely helpful to understand what learning style that you have so that you can obtain optimum success while using this process.

Learning styles may be broken down into four perceptions: 1) the auditory learner; 2) the visual/nonverbal learner; 3) the visual/verbal learner; 4) and the tactile/kinesthetic learner.

1) The auditory learner enjoys open discussion, and is usually a sharing individual, and highly social. This person does not like things such as assignments written on the board, or an assignment sheet. He/she likes

things explained and usually has a good memory. The person with this learning style may have difficulty with the survey process. However, the survey technique is an essential process because of the magnitude of information that the student must retain while preparing for tests. Typically, the auditory learner should talk out loud to themselves when reviewing the survey. This individual should also use his/her survey as a guide to study with other students. Recording the completed survey on a tape recorder and playing it back will also help the auditory learner.

2) The visual/nonverbal learner likes to learn through observation or modeling. He/she would rather hear the news through television or radio rather than reading a newspaper. This person would prefer to watch a film rather than listen to a lecture. This person is a doodler; he/she will often doodle or draw on his/her survey. The visual/nonverbal learner should be motivated to include drawings, concept maps, graphs, and other forms of information within his/her survey. This learning style requires a great deal of self motivation and the teacher should constantly monitor the student's progress.

3) The visual/verbal learner is the person who enjoys watching television. Especially the documentaries where both visual and verbal information is presented together. This learner would rather read newspapers or magazines for news. This person likes to have assignments written down on the board or handout. The person with this learning style is usually the model surveyor. His/her survey is complete and thorough. The teacher should monitor the student's progress early to ensure that he/she is following instructions on how to complete the survey. After a little intervention, the student will seldom need direction or corrections as he/she works through the process. During the study phase, this learner might perform best by reading silently.

4) The tactile/kinesthetic learner seems to have the most difficult time with this process. However, the benefits of learning this method far outweigh the problems associated with learning and completing surveys. This student is the doodler, the tapper, the student who cannot seem to stay in his/her seat. This student has a restless nature and requires many breaks. It might be a good idea to let him or her stand at the back of the room with a table high enough to support his/her work. Use all of the modalities, i.e., visual, auditory, and kinesthetic, when teaching this student. This student should read the survey out loud to himself/herself during the study phase. In addition, this student should include drawings, concept maps, graphs, and other forms of information within his/her survey.

There is a great deal of discussion about learning styles, modalities, models, methods, etc. This study technique incorporates many of these ideas within this process. After many years of refinement, this technique may offer students with a valuable tool that he/she may use to survive high school and college.

The Self-Directed Learner

The primary objective of this methodology is to provide students the necessary tools to become self-directed in their learning experiences. Zimmerman and Bandura's research (1994) support the idea that self-directed learners have greater success and are more likely to graduate. The survey process is self-directed learning techniques that will help students become more organized, structured, and goal oriented. To become successful, the self-directed learner should set goals, self-manage, and reflect on what they are learning.

High Yield Instructional Strategies

Marzano's (2001) High Yield Instructional Strategies may significantly improve achievement scores by using the following educational strategies. Most, if not all, of these strategies are included within the survey process.

1. Identifying Similarities and Differences (Percentile Gain 45%)

    > Improve the students' ability for understanding and ability to use knowledge by actively engaging in discussion that involves identifying those things that are similar and different.

2. Summarizing and Note Taking (Percentile Gain 34%)

    > Improve the students' ability to synthesize and organize information that captures main ideas and supporting details.

3. Reinforcing Effort and Providing Recognition (Percentile Gain 29%)

    > Improve the students' understanding of the importance of effort and its relationship to achievement by addressing the students' beliefs, motivation, and attitudes about the process of learning. Provide the student with recognition using rewards or praise for their accomplishments related to the attainment of a goal.

4. Homework and Practice (Percentile Gain 28%)

    > Provide learning opportunities for students to practice, review, and the application of newly acquired knowledge.

5. Nonlinguistic Representation (Percentile Gain 27%)

    > Introduce strategies that will allow the student to improve his/her ability to represent and elaborate knowledge using visual images.

6. Cooperative Learning (Percentile Gain 27%)

    > Provide students with opportunities to interact within learning groups to enhance their learning.

7. Setting Objectives and Providing Feedback (Percentile Gain 23%)

Provide students with feedback and strategies to improve learning. These strategies should be based on an established learning goal.

8. Generating and Testing Hypotheses (Percentile Gain 23%)

Introduce the student to the scientific method and involve him/her with making and testing hypotheses.

9. Cues, Questions, and Advanced Organizers (Percentile Gain 22%)

Improve the students' ability to retrieve, use, and organize what they already know about a topic.

Step 1: Reviewing/Previewing the Textbook

Goal- Familiarize yourself with the textbook

Step one starts with looking at the textbook. With the textbook in hand, open the book and scan through the pages looking at the pictures, the layout of the text, the glossary, the index, the table of contents, and especially the layout of the paragraphs in relation to the topic sentences. Topic sentences are generally found within paragraphs and relay the author's main idea of the paragraph. Topics will be explained with more detail later in Step 2. Look to see if highlighted or bold face words exist within the paragraphs. Look at the captions located below the pictures. Publishers spend a great deal of money on pictures and you will find that many test questions come from the captions.

Familiarizing yourself with the textbook will help you to speed up the processes involved with using this technique. Knowing where the glossary and index are located will also speed up the process. It is important to understand that some people are unfamiliar with using the indices and glossaries of text books. Because of this, a preview of how to use either the index or glossary might be required. Previewing the paragraphs might help you to determine the reading difficulty of book. Based on this information, you should be able to establish a mental overview of the process before

you begin, i.e., the more difficult the read, the more time you will need to be successful gleaning the information from the book.

Step 2: Identifying the Topics

Goal- To be able to quickly identify the Topic Sentences within each paragraph of the text book.

As stated earlier, a topic is the author's main idea of a paragraph. It is the message that the author is attempting to relay to the reader. One of the most difficult things to impart to the surveyor is not to compare the topic idea with a term or definition. Even though there are some similarities, the process involves more than just terms and definitions. The process may involve writing down multiple ideas for the same topic, include drawings and detailed explanations to help with difficult concepts, using graphic organizers, and mnemonic devices to help the surveyor to understand and grasp concepts. It is a combination of these steps, used in defining the topic, which separates the topics from just simple definitions or terms. With practice, the surveyor will need to glean only the most important information about the topic from one, two, three, or more paragraphs. It is also important not to allow words like terms, definitions, etc., to be substituted for the word **Topic**. When making references to the word topic (used in the survey process), use only statements like- the author's main idea, or topic.

Reading for the Sciences

Reading science textbooks requires a different reading process as compared to reading a typical narrative textbook. Students who have no difficulty reading narrative texts may have more difficulty reading science texts. Reading scientifically requires students to poses special skills to help them to understand how to process information. Understanding factual statements, having the ability to understand patterns, being able to classify objects, problem solving skills, and being able to apply the scientific method are examples of information that the science reader must have in his/her educational schema.

Factual Statements

It is important to build a strong foundation of scientific facts. Identifying a topic within a paragraph, and then supporting it with detailed facts to reinforce the main topic will increase understanding.

Patterns

Being able to relate text to diagrams within scientific reading is a critical component to the process. For example, having the ability to interpret diagrams and apply them to scientific concepts promotes greater understanding.

Classification

Students should be able to classify objects into smaller groups. Finding commonalities among objects will make them easier to understand and remember. Most textbooks are written using patterns of text classification. Because of this,

students should be able to identify these patterns which should promote a greater understanding of the topic.

Problem-Solving

Students should be able to discern the proper steps involved within scientific experiments. They should be able to identify the problems within experiments and be able to solve them, or at least have a general understanding as to how they were solved.

Scientific Method

Having the ability to observe and identify problems, developing an experimental process, having the ability to follow directions, drawing conclusions, and conveying the data to an audience is what science is about. This is another critical component of the reading process that will help the student understand difficult scientific concepts. Without this knowledge, a student may never understand the basic premise of science.

Conceptual Knowledge versus Procedural Knowledge

Gaining the conceptual knowledge of a topic is extremely important. This is one of the most key components of the survey process and should not be overlooked. The best explanation to the conceptual process is "understanding the why"; whereas, the procedural process is simply following a process. When writing the explanations/ideas for the topics down on the survey, try writing them down from your mind using your own ideas. Reflection is an essential component to this process and involves explicit memory, or in simpler terms conscious recollection. The counterpart to explicit memory is implicit memory or unconscious recollection. Reading specialists are very familiar with this terminology and will focus on the integration of explicit memory within their

reading strategies. Writing words directly from the text is a mechanical process which does not involve the frontal lobe and is considered to be more of a procedural process. Remember, involving the frontal lobe is important to the process and will ultimately improve the brains ability to problem solve.

Understanding the idea of using conceptual knowledge during the survey process is paramount to success. Some may refer to a survey simply as terms, vocabulary, or other terminology that does not describe what the survey is about. Therefore, it is important to avoid these derogatory words when explaining the survey process. However, it should also be understood that there is a need for process, e.g., the International System of Units for length is the meter. I am sure that there are some unique ways in which to explain length; but, it is easier just to memorize this type of information.

Rhetoric

Rhetoric, in a scientific textbook, may be considered a waste of time. However, when reading a novel, newspaper, comic book, or other type of narrative reading material, you read as though you are watching a television movie. You are reading for fun and rhetoric makes the reading material flow. The goal of this survey process is to eliminate rhetoric from context and identify only the sustenance of the paragraphs main idea. This may be compared to speed reading; i.e., a person should use rapid eye movement from left to right to identify only the important parts of the paragraph.

Step 3: Writing the Topics Down in an Organized Manner

Goal: Develop an organized document that will help you study and prepare for tests.

The survey, this is the process of writing down the topics found within scientific books or technical manuals in an organized fashion. There is a great deal of information

about graphic organizers, concept maps, mind maps; these are powerful tools that may be used to enhance the processes of learning. The survey is also a tool that may be used in much the same way. The survey process should be considered as part of language.

The brain performs best when using graphic organizers, concept maps, etc. as mentioned earlier. The survey must be written in an organized manner. This will help the brain process information and help the surveyor to retain the information during the study phase of the survey process.
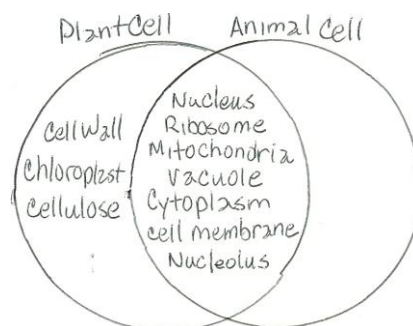
Neatness

Neatness is also important, messy writing, or illegible writing makes it difficult for the reader to understand his or her own written work. Using a word processor might be the answer; however, the whole concept of the survey process is "ease of use". An important idea behind the survey process is speed. Using technology to create surveys might be a great idea, but it might impede the process. Handwriting must also be included within the concept of language because it involves the kinesthetic modality which is an important part of the language process. Involving as many modalities (i.e., kinesthetic, auditory, visual, etc.) as possible will help to solidify the neural connections. Remember that our primary goal is the help the brain reach its maximum potential.
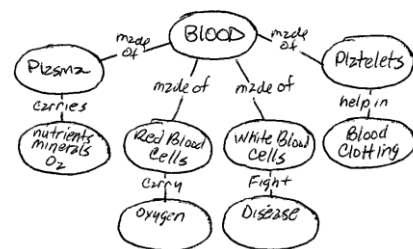
Organization

A great deal of time could be spent on this topic. There are several ideas or concepts relating the topic of organization. Venn diagrams may be used when comparing and contrasting and may be used to show relationships between sets in math. Organizational outlines are good to use when identifying the main concept and sublevels beneath it. A time line may be used to demonstrate complex relationships. The idea web is a great tool that may be used for brainstorming or word mapping and helps the student to organize concepts or ideas. One that I use to demonstrate scientific concepts is the cyclical diagram. The cyclical diagram may be used for demonstrating the water cycle, the rock cycle, the life cycle, etc.
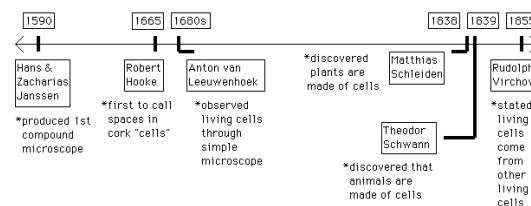
Including graphic organizers within the survey helps the student to easily organize his/her work; therefore, it is important to use them whenever possible. The key to this is to find graphic organizers that work for you (the surveyor) and practice using them while surveying the textbook.

Example of a Venn Diagram

Example of a Concept Map

Example of a Timeline

Example of a Cyclical Diagram
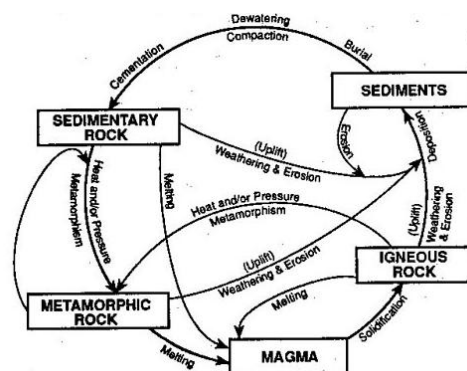
Erasable Pins

One factor that will contribute to neatness is using erasable pins. These pins come in many colors and when used correctly, will improve the neatness of the surveyor's work. It is recommended to use three different colors of pins during the survey process. The black pin is used during the first part of the survey process. Using the black pin should include the surveyor looking up and writing down the topics prior to classroom discussion.

The blue pin should be used on the left and right side of the survey and is used to reflect the teacher's words during classroom discussion. The blue pin should be used to take notes on what the teacher says during discussion. However, most of the important information should have been written in black pin. If this is the case, the blue pin may be used for clarification of the topic, to underline or circle the notes already taken, or to use acronyms or abbreviations to designate important test information.

The red pin should be open and "on the ready" during classroom discussion. If the teacher uses nonverbal or verbal cues for potential test questions, the red pin should be used. Abbreviations such as TQ or EX may be written with red pen to identify test questions or examples.

A problem that might exist because there are many different colors of writing pins. Using colors other than the ones recommended above will only cause confusion. It is important to establish using only the black, blue, and red pins while doing the survey. Again, it is important to familiarize the brain with the process.

Page Numbering

The human brain likes order. The survey process uses many principles from brain based learning. This is why it is important to emphasize page numbering. Page numbers help the surveyor maintain order within the brain. During the studying phase page numbers

help keep the survey in order. More about the studying phase will be discussed in more detail later in this book. Notice how the page number is located in the upper right corner of Figure 1, it should also be placed on the upper left side of the back of the same page, or page number 2.

Layout

The Right Side of the Survey

Have you ever purchased paper specifically for note taking? If you have, you know that it is expensive. For the purposes of this survey process, it is recommended to use regular notebook paper. The loose-leaf ring paper that may be found in either regular or college ruled is recommended. A ring binder is highly recommended in order to store the completed survey sheets. The ring binder will help the surveyor to become more organized and the papers may be easily removed, which is very helpful during the study process.

Figure 2 is an example of a survey. This example of a survey is called a "split page." In order to achieve a straight line, separating the left side from the right side of the page, fold the paper vertically down the paper prior to starting the survey. This will help the surveyor to keep a running straight line separating the left and right sides of the page. Notice the layout; especially the right side of the notebook paper. This area has the topics and notes that the surveyor is responsible for completing prior to attending the first class when the topics will be discussed.
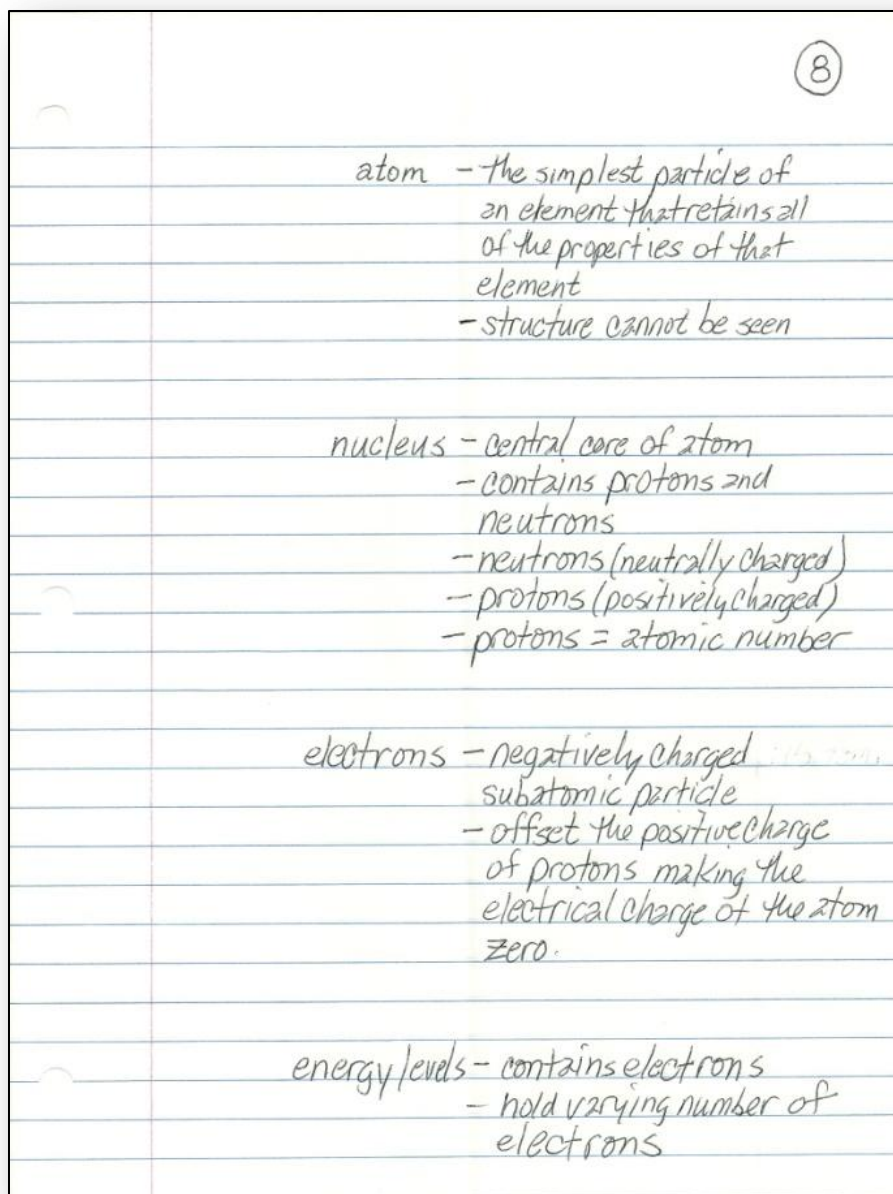
Figure 2: This is an example of a survey that includes the portion of work that is completed proior to coming into the classroom for discussion.

Notice how the topics extend from the midline of the paper towards the left side of the paper. This is done for two reasons. First- neatness, the brain performs better when it has familiarity with process. In this case, topics are easier to identify when they

are to the left of the explanations. Secondly- during the study process, the surveyor may cover the right side of the page up with his/her hand, or another sheet of paper, and attempt to explain the topic without looking the answers.

Remember that the right side of the survey must be completed prior to attending the class. Prior to the subject material being discussed in an open classroom setting. In most cases, the course requirement should be found on a course syllabus. A syllabus may be provided by the teacher or professor prior to starting the class. For example, the first class will discuss chapters 1 and 2, the student is responsible for reading pages 7-35 and is ready for class discussion. At this point the surveyor should survey pages 7-35, in the example from Figure 2, and have the survey completed prior to attending the scheduled class.

The Left Side of the Survey

After the topics have been identified and written down during the research period as indicated with Figure 2, the next step includes attending classes with the intention of clarifying the topics. Figure 3 includes the survey with the addition of clarification of the topics, classroom discussion notes, and potential test questions.

Notice the different colors of ink used within this survey. Black ink is used for topics, which is work done prior to any classroom discussion. Blue is used to indicate when the teacher speaks during classroom discussion and to signify clarification of the topic. Blue ink should also be used to write down questions that will be asked prior classroom instruction. Red indicates that it will be on the test as in the abbreviation example TQ for test question.
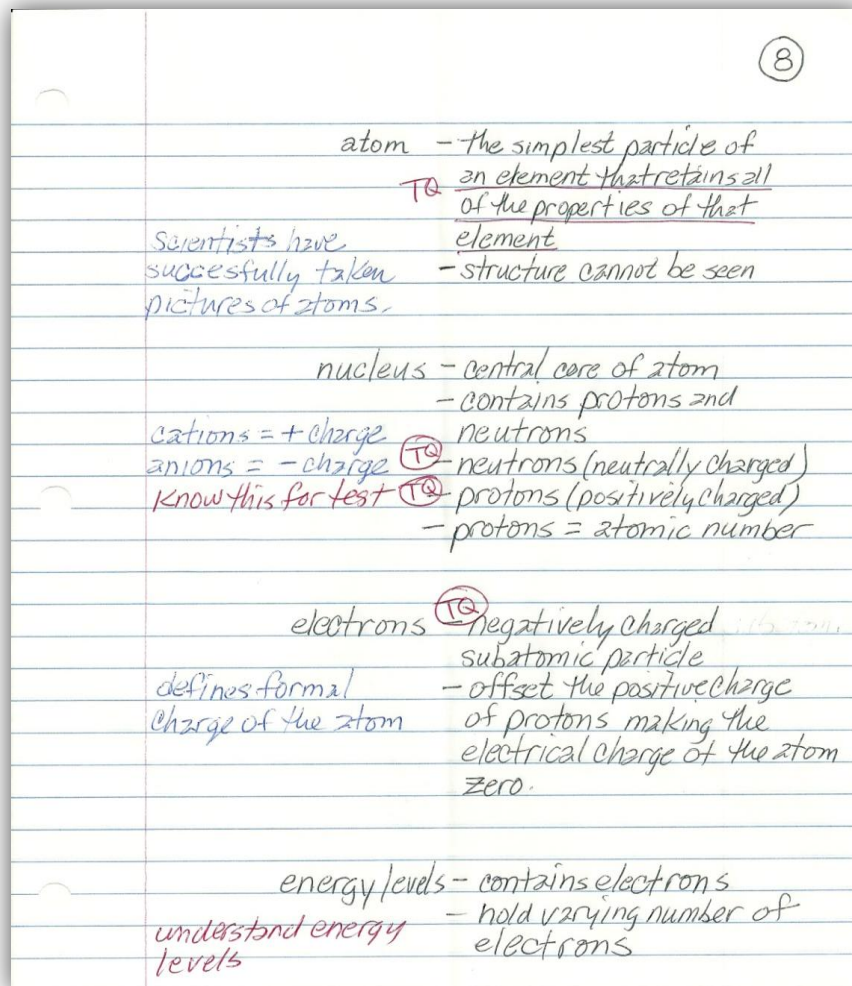
Figure 3: Is the same survey as depicted in Figure 2; however, it includes the second part of the notetaking process.

Because these notes have been created prior to classroom discussion, following the course syllabus or assignment handout, most of the classroom notes are completed prior to walking into the classroom. This should give the surveyor the ability for undivided attention and be able to focus on what the teacher is saying during classroom discussion. This concept really works. While other students are attempting to write notes and keep up, they miss most of the discussion. Conversely, the surveyor may

focus on what is being said in class. He/she can underline, circle, use abbreviations, or simply write clarifications on the topics being discussed.

Step 4: Bringing the Survey to the Classroom to Take Notes

Looking at Figure 3, you can see the notes that the surveyor has written after attending the class that the student surveyed. As previously stated, the right side of the survey contains the notes that the surveyor performs prior to receiving any instruction from the teacher. The left side of the survey is used to take classroom notes. These notes are usually written using a blue erasable pen. It might be advisable to use a red pen to designate actual test questions that may end up on the test.

Step 5: Asking Clarification Questions

While working through the survey process, there may be instances where the surveyor does not fully understand the topic. If this happens, make a notation in the left side of the "split page" survey to ask clarification questions during classroom discussion. It is also important to write the clarification of the topic using a blue pen. This will help surveyor to recall the information when needed.

As stated earlier, it is important to translate topics from your mind into ideas before writing them down onto the survey. At some point it might seem impossible to translate these ideas into writing, or you may not understand what the topic is about. If this is the case, you should ask for clarification at the next class meeting or other opportunity. When the clarification of the topic is given, attempt to translate the topic into your own idea.

Step 6: Studying the Survey

This is the final stage of the survey process. To study the survey one should follow these steps.

1. Make sure that the survey is in line with the assigned reading material.
   - Staple the survey together (in the correct page order) to study the specific material that is assigned.
   - Consider each assigned reading section as a separate survey. Start the page of a new survey with 1.
   - Refer to the syllabus to survey the assigned reading prior to attending class
   - Keep a study calendar with assignments
   - Refer to study guides
   - When finished, keep the surveys together in a three ring binder.
2. Make sure the pages are numbered correctly, and study them in the same order.
3. Use a separate sheet of paper, your hand, or fold the survey in order to cover up the explanation of the topics while studying. By knowing the type of test that the teacher/instructor may give, i.e., multiple choice, fill in the blank, essay, etc., you may use the survey to study based on this knowledge. Folding the paper lengthwise will give you the option to study for specific type of tests. By studying the note side of the page; flipping the paper over to look at the topics, it is easy to study for multiple choice tests. Conversely, by looking at the topic side and then attempting to define they conceptually will help you to study for fill in the blank or essay type tests.
4. Study, this is one of the most important steps to the process. Just because you have completed the survey does not mean that you are ready for the test. The survey should be studied several times prior to

taking the test. Start studying on page 1 of the survey and work through until you get to the final page. Then repeat the process until you know the material.

The survey is a very versatile study tool, after completing the survey, based on assigned reading, you may fold the survey and keep it in your pocket until an opportunity presents itself to study. Studying may be done while waiting for someone, during work breaks, waiting for or riding the bus, before going to bed, etc.

The survey process does several things: it helps you to become more organized; it compels you to look deeper into the subject material; it improves your comprehension skills; and it helps you to become a better reader.

REFERENCES

Crick, F. (1994). *The astonishing hypothesis*. New York: Simon & Schuster.

Goodman, K. S., & Goodman, Y. M. (1981). A whole language comprehension-centered view of reading development: A position paper (Occasional Papers No. 1). Tucson, AZ: University of Arizona, Program in Language & Literacy.

Flesch, R. (1955). *Why Johnny can't read: And what you can do about it.* New York: Harper and Row. pp. 2-5, 132-33.

Harste, J. C., & Burke, C. L., (1977). A new hypothesis for reading teacher education research: Both the teaching and learning of reading are theoretically based. In P. D. Pearson (Ed.), *Reading: Research, theory, and practice: Twenty-sixth yearbook of the National Reading Conference*. Chicago: National Reading Conference.

Goodman, K. S. (1967). Reading: A psycholinguistic guessing game. *Journal of the Reading Specialist*, 6, 126-135.

Goodman, Y. M. (1989). Roots of the whole-language movement. *The Elementary School Journal*, 90, 113-127.

Goodman, K. S. (1992). I didn't found whole-language. *The Reading Teacher*, 46, 188-199.

Lemann, N., (1997). The reading wars. *The Atlantic Monthly*, 280, 128-134.

Marzano, R. J., Pickering, D. J., & Pollock, J. E. (2001). *Classroom instruction that works: Research-based strategies for increasing student achievement.* Alexandria, VA: Association for Supervision and Curriculum Development.

McVeigh, Tracy., (2001, August 11). Computer games stunt teen brains. *The Observer*. Retrieved from http://www.guardian.co.uk/world/2001/aug/19/games.schools

Samuels, S.J., & Kamil, M.L. (1982). Models of the reading process. In P. D. Pearson, R. Barr, M.L. Kamil, & P. Mosenthal (Eds.), *Handbook of reading research* (Vol. 1, pp. 185-224). New York: Longman.

Vail, P., (1991) *Common ground: Whole-language and phonics working together*. Rosemont, N.J.: Modern Learning Press, p. 3.

Venezky, R.L. (1984). The history of reading research. In P.D. Pearson, R. Barr, M.L. Kamil, & P. Mosenthal (Eds.), *Handbook of reading research* (Vol. 1, pp. 3-38). New York: Longman.

Watson, D. (1989). Defining and describing whole-language. *The Elementary School Journal*, 90, 130-141.

Zimmerman, B. and Bandura, A. (1994). Impact of self-regulatory influences on writing course attainment. *American Educational Research Journal*, 31(4), 845-862.