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Developing Critical Thinking Skill in Eighth Grade Students Using Summarization, Questioning, and Drama

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ABSTRACT

This qualitative research study reports on the observed and reported experiences of 26 heterogeneously grouped eighth grade students in a regular education civics class using role-play, questioning and summarization to foster critical thinking and the possibility of the improvement in standardized test scores with the development of critical thinking skills. The study defines critical thinking and identifies a method of measuring critical thinking growth. The work also reports how dramatic activities, teacher and student generated questions, and reinforcement of summarization skills help students develop critical thinking skills. The study provided evidence that role-play, questioning and summarization improved these students' critical thinking skills. Furthermore, the study presents data from pre and post-study tests suggesting that the strategies used to improve critical thinking also improved student performance on standardized test.

ACKNOWLEDGEMENTS

I would like to thank my students for their participation my study. Without their willingness to embrace the activities, the study would have been dramatically different. I admire their courage to stand before their peers, risking embarrassment, to experiment with dramatic conventions and express / defend personal opinions. I also wish to thank my students for their honest and frank input on my instructional methodologies, helping me to grow as a teacher.

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Autobiographical Statement

I did not come to teaching directly. I was not one of those students who had their lives planned out. Finish high school, go to college, get a degree in teaching and then return to their old school to become the professional, yet cool and approachable teacher that had inspired them to become teachers. Truth be told, I did not care for teachers or, for that matter, school. If one elected to believe in karma or some grand balance in the universe, there could be seen a grand irony, that three plus decades from high school graduation I am writing a thesis as a requirement for a Master's degree in education. The fact that I am writing this would come as a surprise to some of my former teachers who would remind me on an almost daily basis how limited my abilities were in memorizing times tables, reciting lengthy poems, and how school - issued tablets were for writing in cursive not printing or drawing.

My reconnection with the education system did not occur until the early eighties. After employment in various fields including retail and the manufacturing sector where, similar to what Paulo Freire discussed in his work Pedagogy of the Oppressed, I worked my way from the position of the oppressed - factory line worker and store clerk - to the position of the oppressor store manager and manufacturing supervisor. I became, as one might say, available for a different line of work after a disagreement with upper management on the speed and volume of manufacturing positions transferred to factories in countries other

than the United States. I would like to say that I took the high road in this discussion, but in reality it was about the number of hours worked and the compensation, along with the feeling I was working others and myself out of a job. Little did I realize at the time what effect this change would have on my feeling about schools and teachers.

At this point in my life, our family consisted of my wife, my son, the dog and me. We had moved to a community located in the Poconos. Before this move, we were fortunate that both our parents could watch my son while my wife and I worked. When we moved, we now had to pay for daycare. As my wife and I looked at our options, it became apparent that we could save money and have my son come home to a parent waiting for him after school. The choice became who stayed home. She had a good job with good benefits, and I had my dignity. I soon found the perfect job for our situation. I would become a cafeteria worker in the local middle school. The hours were ideal, work started after my son was on the bus and I was home in time to pick him up from the bus stop. I was back in school.

It was from behind the serving counter wearing the obligatory hair net and uniform of the school food service corps that I began to see school, teachers and students from a different vantage point. The clamor and energy of the students was at the same time exhausting and energizing. I observed the interaction of students and teachers. I could see the effects of certain teachers on the students;

some seemed to elicit genuine warmth from the students while others drew looks of distain, anger, and, in some instances, fear. Fellow workers warned me about boorish students and their attitudes toward cafeteria workers. While I did experience some of this behavior, overall the students were just kids being kids. I did note the workers with the most problems professed a dislike for “teenagers”.

Over time, I became the head cook of the middle school cafeteria. One of my fondest memories of this experience was when the French teacher approached me to help her create a French restaurant in the cafeteria for her eighth grade students. The menu would feature escargot, potatoes au gratin, French bread and red wine (grape juice). We transformed a small section of the room into a reasonable simulation of a restaurant. Using red, white and blue roll paper hanging from ceiling to floor, we sectioned off a sunny corner of the cafeteria. French love songs played softly in the background. Cafeteria tables were transformed into elegant dining tables using white tablecloths, silverware and candles. The potatoes were a hit; the escargot did not fare as well with the students.

During the course of the dinner, I was impressed with the genuine respect between most of the students and the teacher. I began to see school as a place not just of instruction but one of learning. I began to think I could make a difference in a student’s life. When the opportunity came for me to become a hall monitor in the middle school, I took it. Now I was not simply in the school building with

limited contact with students and faculty but now would be interacting with both on a daily and more personal level.

In the middle school, “hall monitor” was a code for security. Officially, my job along with three other hall monitors was to maintain order in the cafeteria, check for hall passes, check bathrooms for illegal activities, remove students from classrooms when they refused to leave, and breakup/prevent fights. Unofficially my job was to develop trust between adults and students. When not assigned to a specific location, I was to walk the halls and grounds of the school as an adult presence. During this time, I had the opportunity to observe almost forty middle school teachers in their classrooms. I could listen to the lessons, the teacher-to-student, student-to-teacher and student-to-student talk. I grew to know which teachers had discipline issues and which never seemed to have “problem” students. I began to see how students reacted to various styles of teaching, discipline, and teacher attitude.

I did not realize it at the time, but I was in a pedagogical laboratory. I was an observer of the daily interaction of students and teachers. I began to develop a concept of what a good educative classroom looked like and how to create one. I became comfortable working with at risk students and those who would probably never be at risk. I also worked with principals on discipline issues. I was able to observe how principals were both advocates for and disciplinarians of the student in trouble. I was able to have discussions with many assistant principals on what

makes a good teacher and a good school. It was during this time that building Principal, Dr. Joseph Lewis, suggested I stop being an observer of teaching and become a teacher. Acting on his encouragement, I enrolled in college. I was back in school; not only was I working in a school, but now I attended school nights, weekends, and summers as an elementary education major. A few short years later, degree in hand, I began teaching.

My prior experience in the retail and manufacturing business had a profound effect on my teaching style. I was accustomed to setting goals then providing the materials, labor, and motivation to meet the goal. Success was not happenstance. Effectively meeting goals was a result of planning and effort. I had no preconceived notions of limits on the ability of my students. The goal I set was to have all my students thrive in the classroom. I expected all my students to be successful in my class at the level I was teaching. I did not buy into the negative advice some veteran teachers give to the new teacher on the limited ability of the students. Those who would deny a child the opportunity to be successful because they perceive the student to be unable to reach rigorous goals angered me.

I would like to say that every day all my students met my goals. They did not. I did not face every new day with a song in my heart and a smile on my lips. There were days when I was tempted to adopt the attitude of the negative practitioners. It would be easier to push less and blame more. The small successes I could see in the students kept me from changing my efforts.

As I continued to teach, I became more aware of the individuality present in the students. Each student had something to bring to the classroom. Although grouped by age, and supposedly the same actual developmental level, the students did not necessarily fit the schema of the educational experts. Each came with a different developmental level and a different level of potential development. Vygotsky (1978) identified this difference between actual development and potential development as the zone of proximal development. I studied the work of Vygotsky in undergraduate school, but now in the classroom the implications of Vygotsky's work finally became apparent. While I could maintain my high standards, I would need to modify my instructions to match the students' zone of proximal development. Upon reflection, this is no different from when I was working in industry. There I would do what was necessary to net the goals; in teaching, I would do the same.

As I continued my journey in education, a malevolent specter began to make its appearance. A standardized test would now be the lens through which all students, teachers and schools would be judged; each compared to a benchmark that would be set higher with each passing year. This new accountability standard and the subsequent shift of teaching to a set of facts rather than teaching to think would be my motive for my research and thesis.

Researcher Stance

If Not Now, When?
Hillel 1St century BCE

When does learning happen? What is true learning? Can we teach students to learn? Why can Johnny read but not necessarily think? Who teaches thinking? Can you teach thinking? With questions comes the search for answers, and so begins my teacher action research.

The ghosts of Dewey, Vygotsky, and other luminaries of education seem to haunt my thoughts as I teach. Am I in the zone of proximal development for this student? Are the students ready to move from Piagetian concrete to abstract thinking? Is the experience for this student educative or mis-educative as Dewey might ask? Is there a better way to make a living? Observing and listening to my students, I sense a potential untapped. They can do better, not necessarily on one high stakes test, but overall and over the year, a steady growth towards independence from simplistic answers to insightful thought and response, moving toward learning rather than memorization.

When I ask knowledge or comprehension level questions in my classroom, many students select passages in the text and read the text verbatim or repeat the text from memory. When asked to explain what the passage means in their own words, they are too often unable to answer. When questioned on how or why they picked the passage, many students answer they were taught to look for key words

from the question in the text to “get an answer.” It would appear students are somehow missing the need to internalize and comprehend information to make it their own and have instead adopted a coping method to “get an answer.” Many times, students are able to identify a concept, but they are unable to expand upon it or define the concept in their own terms. Other times, the passage selected may not even be relevant to the question, despite the fact some of the key words from the question are within the passage.

As I continue to question students, moving to Bloom’s analysis level, students begin the time-honored tradition of hiding behind books on the desk, copiously studying the palms of their hands, and attempting to look as small as possible. In an instant, a classroom of gregarious eighth graders becomes the model for monks taking vows of silence. Students who, a few moments ago in the hall had opinions on everything, were arguing for and against the best video game, were debating what is actually in the hotdogs served for lunch and whether or not cheerleading is a real sport, now become mute. When I ask, “Would America be a better place to live with a Just Monarchy or a Republic where some politicians take bribes for votes?” I face a classroom of palm studying eighth graders trying to shrink themselves to fit behind the civics book propped up on their desk.

While reviewing concepts, students demonstrated the ability to recall facts about the various types of governments. Previous low level questioning had

shown the students could name the types of government and differences between each. Now when faced with the task of making a choice and defending their opinion, prior knowledge of governments seems to have vanished.

While this does not occur every day and in every lesson, it does appear frequently enough for me to make note of and begin the process of questioning why it occurred. Are the students simply trying to complete an assignment quickly, or are there deeper issues involved? Have students been given aids to help in reading with the unintended consequence of hindering thinking?

During my annual administration classroom observation, I introduced the concept of “doing the right thing” as an introduction the philosophies of Locke, Hobbs, and Montesquieu. Students had to develop their personal definition of what doing the right thing was. Afterward the students shared their ideas, and we tried to form a consensus on the definition of “the right thing.” The students discovered how difficult it was to reconcile differing moral standards to meet the demands of the entire group. During the post-observation debriefing a building administrator commented on how enjoyable the class was, listening to the students grappling with the concept and the back and forth of the conversations among the students. The administrator felt the students were experiencing authentic learning. Later in our conversation, this administrator alluded to how fortunate I was to be teaching a subject that still allowed this freedom in teaching.

I was fortunate to be teaching a subject not yet oppressed by the Pennsylvania State System of Assessment.

A repeating theme of conversations with my colleagues is the inability of our students to think for themselves. Additional concerns center on how they will survive in high school with the skills they have now. Both points of the conversation are valid. There is, however, a question not often asked:, if we do not teach students to think, when will they do so?

"If not now when?" asked Hillel. (1st century BCE) Perhaps it is my experience and recollections from my younger days when we, as students, were compelled to meet and defeat the threat from foreign countries. America was losing the space war. The country demanded that educators produce the best and brightest minds to meet the threat. The president outlined the plan and told the nation the difficulties of the task and the rewards of the effort.

> We choose to go to the moon in this decade and do the other things, not because they are easy, but because they are hard, because that goal will serve to organize and measure the best of our energies and skills … (Kennedy, J. Sept 12, 1962).

Is not critical thinking in combination with expository text reading skills too valuable of skills to accomplish by happenstance? Do we as a nation still face competition from abroad? We choose to teach these skills not because they are

easy but because they are difficult, but in that difficulty, we will achieve a lasting goal: students who can reason.

For my class and myself, the when will be now, and although it may not be easy, the goal is a moral one. We cannot simply stand by and think others will perform this task. We have an obligation not only to get students to score well on tests but to provide the educational experiences that allow all students to reach their full potential. It is therefore important to know how to help students foster deep learning and critical thinking while continuing to use good reading strategies. Students who have mastered critical thinking and reading strategies will have the skills necessary to become contributing members of society.

The purpose of my study is to determine if eighth grade students can develop critical thinking skills by developing good reading strategies such as summarization skills and question development. In addition to the reading skills reinforcement, the class will experience drama activities in the classroom including instruction through role–play, interpretative movement, and story. Additionally I will be looking at the effects of this type of instruction on improving student scores on standardize tests.

Trustworthiness Statement

The worth of a research study rests in the confidence of the reader in the validity of the research methods and the trustworthiness of the researcher. To achieve this confidence, standards of methodology, analysis, and data collection

need to be upheld. Prior to the commencement of the work, permission to conduct the study was obtained from the school principal, (see Appendix A) and a copy of the proposed work was submitted to the Moravian Human Subjects Internal Review Board for approval (see Appendix B). With the approval from both the principal and the Human Subjects Internal Review Board, I informed all students of the study and parental permission to use data collected from students obtained. (see Appendix C). Information on the purpose of the study, containing information about who to contact concerning the study and how to withdraw from the study, was included in the form sent to the parents/guardians. Participants and parents/guardians signed a consent form. In conjunction with the letter, all students within the proposed study were supplied the identical information contained in the permission to participate letter. All students within the classroom, participant or non-participant, experienced the same differentiated instruction and assessments, with data collected on the participants being the only differentiation. Special Education students participating in the study had their instruction modified to meet Individual Education Plans.

I removed the collected data daily from the study site. I kept all data accumulated during the study in a safe and locked location. While collecting data in the field, I kept the field log in a secure location. At the conclusion of the study, I destroyed the raw data. All codes were held in a secure location; I use pseudonyms or composites to ensure anonymity. The need for this control of data

and the anonymity is highlighted in the work Action research of teachers: Traveling the yellow brick road (2005, Holly, Arhar, & Kasten).

To insure trustworthiness and validity, the study incorporated the findings of Holly et al. (2005) that there is a need to encourage full participation of the students. My students received feedback as to the progress of the skills being observed and were encouraged to suggest how to modify the instruction to help them succeed. Dewey (1938) points out for an experience to be educative the experience must be a positive social experience and encourage the individual to develop a desire for continued learning. The inclusion of the student in the research fulfills two goals; it provides the student a means to determine their growth and adds to the research by obtaining student reported data. Incorporating student feedback and participation adds validity to the study. The work becomes a joint effort between students and teacher rather than a researcher-controlled experiment.

Holly et al. (2005) convey the need for the development of trust within the study. Students need to feel safe in exchanges between teacher and student. Trust in a classroom is built over time. My study began three weeks after the start of school. Trust building activities as described by Jonathan Neelands and Tony Goode, authors of Structuring Drama (2005) began at the onset of the school year. Students also received instruction on the rules for civil discourse while expressing opinions. These activities continued throughout the study. During the time before

the commencement of my study, students had opportunities to express their opinions during class discussions. These opportunities for open and honest discussions continued during the course of the study. A study without this evidence of trust could be suspected to lack of validity.

In their work, Holly et al. (2005) remind researchers to include provisions for the withdrawal of participants. The student or parent/guardians can initiate this withdrawal. While it is important for parents/guardians to have this ability, it is the power given to students to withdraw that seems to build trust. Students, who do not feel safe, can simply withdraw. This gives the student a sense of control over their lives. Given this power, students can determine for themselves if the study is trustworthy. Students who choose to remain give validity to the study. They have chosen to participate and believe in the honesty of the work.

The inclusion of these guidelines for a trustworthy study as reported by Holly et al. (2005) gives the readers of the study a level of comfort as to the honesty and soundness of the work.

Literature Review

Introduction

Students expect to leave high school with a set of skills usable in the working world or in the pursuit of higher education. Recent research and feedback from both business leaders and academic leaders indicate this is not the case.

> Across the United States, business leaders and educators agree that too many high school students are graduating without the skills they need to succeed in the workplace or in higher education. This lack of preparation leads to problems in meeting the needs of the economy, and it means remedial classes for college freshmen. (Report for Arkansas State Dept. of Education, Little Rock, 2007, p.2)

Students are too often not able to think for themselves or apply reasoning skills to a new problem. "We want students to think for themselves and not merely learn what other people have thought." (Ornstein, Pajak, and Ornstein, 2007, p. 165) Schools and teachers both need to willing and able to prepare students for the twenty first century.

Critical Thinking

One of the goals of educators should be to not only build a knowledge base but also enable students to build critical thinking skills to apply this knowledge to new and unique experiences. The ability to think critically will benefit the students long after they have left the classroom. Educators cannot determine what vocations their students may pursue. Many students will be doing jobs that do not yet exist. How can educators provide the skills needed to be a contributing member of society? To be successful, students will need to know how to think and apply core knowledge.

Many educators may view today's era of high stakes testing as an impediment to teaching thinking. Many may argue that time will not allow the

luxury of teaching thinking when the emphasis seems to be on improving test scores. In many of today's standardized tests, the object is to measure what students know rather than how they think.

Definition

Critical thinking is be defined by A. C. Ornstein, Pajak, and S. B. Ornstein, (2003), as "Skillful, responsible thinking that facilitates good judgment because it (1) relies upon criteria, (2) is self correcting, and (3) is sensitive to context" (p. 162). These criteria include strong consideration of standards, laws, regulations, conventions, norms, tests, credentials and test findings and the like. Ornstein et al. go on to say ordinary thinking offers opinions without reasons while critical thinking provides good reasoning behind the thinking. They also argue that critical thinking is introspective, looking to discover weaknesses within the thinking, maintaining the possibility that the thinking is erroneous. If errors are discovered, then the critical thinker will self correct the error and modify his/her position. Ornstein et al. point out that critical thinking is also sensitive to context. Critical thinkers will be aware of circumstances of the arguments presented. Are the arguments attempting to set special limitations, irregular circumstances or is the evidence atypical. Good critical thinking will identify these situations where criteria need to be modified.

Critical Thinking Skill Development

Ketterlin-Geller, McCoy, Twyman and Tindal (2003) point to the need for alignment of the curriculum, instruction, and assessment to promote critical thinking measurement (CTM). With CTM assessments students answer low-level questions requiring the recall of facts. Students must then explain their reasoning behind the answer. In a typical CTM assessment, (see Appendix D) the student is given information pertaining to the overarching concept of the lesson. Using this information, the student identifies the concept then justifies his/her choice by constructing written or verbal arguments supporting the response. In my study, I will be requiring students to not only answer a question but also be able to explain why and how they believe their answer is correct using prior knowledge and the overarching concept of the lesson. Using CTM responses, I have a method to assess the content knowledge as well as critical thinking growth.

With CTM, student assessments and instruction are not only on critical knowledge forms (facts, principles) but are also used to develop declarative knowledge, what one knows, and conditional knowledge, when one should use it. Critical thinking measurement (CTM), assessments measure complex cognitive processes. Ketterlin-Geller et al. (2003) found that the use of CTM improved declarative knowledge for Title 1 students and students with disabilities.

Ketterlin-Geller et al. (2003) found that by expressly addressing the overarching concepts of a lesson rather than simply the facts of the lesson, student

learning is accelerated and deepened. By focusing on the concept of the lesson and allowing students to use the facts to build core knowledge within the concept, students build critical thinking skills. These critical thinking skills aid students in improving scores on standardized tests that require students to recall facts. It would appear that by developing critical thinking skills, students could show improvement on standardized tests that measure what students know.

Ketterlin-Geller et al. (2003) found in a cumulative review of three textbooks on world history, United States geography and earth science that the majority of questions were factual, ranging from eighty-four percent to as much as ninety-five percent. Students begin to associate recall of an assortment of facts with thinking. To develop critical thinking skills, Ochoa-Becker (1990) feels the use of probing questions by teachers, facilitates the growth of critical thinking skills. Ochoa-Becker (1990) also look toward including controversial issues and speculative questions that have no right answer to stimulate critical thinking in adolescents. To aid in the building of critical thinking skills, Barnes (2005) identifies the necessity of teachers to remind students to be critical thinkers at the start of the assignment. Additionally, Mackenzie (2001) found when students were encouraged by their teachers to combine content from other lessons, knowledge from their lives, past experiences, and contextual facts, critical thinking began to develop.

The inclusion of teaching critical thinking within a well-designed curriculum seems to help students in two areas: becoming better learners and providing evidence of knowledge on standardized tests (Ketterlin-Geller et al. 2003). Teaching critical thinking skills should not be set aside as ineffective in obtaining proficiency on standardized tests. Evidence would seem to indicate critical thinking requires a strong knowledge base and the ability to recall those facts to perform critical thinking.

Reading to Develop Critical Thinking

Students will be reading enormous amounts of text during their lives. Between sixth and twelfth grade, students from my school system will have been responsible for reading thirty textbooks and multiple expository text handouts. Many of my students have expressed displeasure when reading expository text, citing boredom of the text, lack of connections to their world, and not understanding what they have read as the reasons. While some of the resistance to reading expository text is simply the nature of the adolescent student, some of the blame for this hesitance may be attributed to reading instruction and what reading means to the student. Students are taught to read in the primary grades where reading skills are developed and improved upon in the learning to read phase of education. By the fourth grade, students begin the "*reading to learn phase"* of education. The instruction now moves on to using reading skills to extract information from the text. This appears to be the norm until the students enter

high school. Unless the student has demonstrated poor reading skills, most reading instruction ends. Ornstein et al. (2003) define criteria as one of the key elements in critical thinking. One of the ways students can gain insight to these criteria is though active reading. Active reading is reading with a purpose, using reading to determine what the author is saying and how to use this information in their thinking. Ochoa-Becker (1990) argues for the inclusion of controversial subjects to stimulate student critical thinking. With the inclusion of this type of reading, students become engaged in the reading, thinking about what is being read not just reading words.

Engaging Students

For learning to take place, students must be engaged in the process. If students disconnect from the educational process, development of critical thinking, reflection, and constructing questions cannot take place.

Garber (2002) looked at resistant minority freshman and sophomore students with a grade point average of 2.0 or less on a scale of 4.0 to discover why they disengage from the education process. He found students prefer to be perceived as “bad” rather than “stupid”. Garber (2002) also notes the effect of self-image. Students who view themselves negatively behave in a negative way. Some students were resistant because they viewed the subject as too difficult for them to master. The students also seemed more likely to be resistant to a particular teacher based on the students’ observation of the abilities of that

teacher. The students were looking for an understanding attitude, willingness to help, knowledge of subject matter, and varied instructional methods. Garber found that resistant students wanted teachers who know the material, push them to work, and respected them. Garber reported student behavior in this type of classroom environment was improved.

Beamon (1997) argues for the creation of a safe classroom where students are supported, challenged, and allowed to practice thinking. He calls for a classroom with well-established student generated rules of conduct and a genuine atmosphere of respect among students and teacher. This atmosphere is established over time as the teacher from the onset of the school year develops trust in the classroom beginning with modeling. Within the safe classroom, students can fail at critical thinking and not feel threatened. Students are valued for their efforts and pushed towards higher-level thinking. Beamon's description of a safe classroom seems to reflect what Garber (2002) reported as the type of classroom resistant students wish to be in.

Ochoa-Becker (1999) reported middle school students need support, respect, and teachers who care about them. Additionally these students need to find connections between their world and the classroom. Without these conditions, middle school students find more opportunities to rebel and fight. MacKenzie (2001) found that teacher stance added to engagement of students. Teachers who take the stance that thinking, questioning, and engagement are

expected in the class have thinking, questioning, and engagement occur. Engagement would appear to require a combination of teacher attitude, expectations, and content.

Metacognition

Collins (1994) identifies the role of metacognition as, “the conscious awareness and the conscious control of one’s learning,” as an integral part of reading expository text for learning. Collins’ work calls for the inclusion of metacognition in reading instruction. This call for metacognition while reading is not new. Thorndike’s “Reading as Reason” (1917) looked at comprehension, interpretation and metacognition; “The mind is assailed as it were by every word in the paragraph. It must select, repress, soften, emphasize, correlate and organize, all under the influence of the right mental set or purpose or demand.”(p.329)

Aldridge (1989), building on the work of Thorndike, further explains that, rather than simply reading and attempting to memorize, the successful student will need to read with reason. He found that students taught to form questions and search for answers before and during reading could recall more details and apply this information to help understand new experiences. Vacca (2006) looked at the need to have students motivated to read text. The suggestions for motivation include making connections to the students’ lives, presenting problems to be solved by the reading, and having students generate questions about the reading. A study by Harmon, Hedrick, Wood, and Gress (2005) adds to the motivational

aspect of Vacca's work with an examination of the effects of allowing students to self-select vocabulary to identify concepts within expository text. They found that students became intrinsically motivated to read the text when they selected what vocabulary was best to study to gain meaning from the text, and when they presented their vocabulary and reasoning for their choice to their peers. The vocabulary self-selection process allowed the students to internalize both the word meanings and the key concept fostering deeper learning.

Reflection

Chin (2001) found the metacognitive skill of reflection could be advanced with instruction and practice. With reflection, students begin to think about their thought processes. This reflection can be fostered by the questioning skills of the teacher (Beamon, 1997). Students also play a part in their own reflective learning by constructing questions from the experience by combing past experiences, prior knowledge and sharing these questions with fellow students (Chin, 2002).

A study by Song, Grabowski, Koszalka, and Harkness (2003) looked at what middle school, high school, and college students perceive as the factors that promote reflective thinking. They found a significant difference between the groups. College students believed scaffolding produces the most gain in reflective thinking while middle school students believed that learning environment played a major role, specifically interacting with peers- i.e., a social classroom. Song et al. (2003) attribute this difference to the cognitive development of the groups. The

middle school students were at the end of pre-reflective stage, as defined by King and Kitchener (1994), where defending one's argument is not to explain the argument but to prove the others wrong. They are about to advance to the quasi-reflective stage where the emergence of abstract thinking is superseding concrete thinking. The implications; just as the students are advancing to higher-level thinking and the ability to express this thinking, a high social-risk task, peer pressure of standing out, is increasing. This conflict of social development and cognitive development highlights the difficulties faced by both adolescents and teachers. The development of small group activities to promote experimentation in reflective thinking with the group, along with the creation of a safe classroom environment will address this issue. Classroom instruction methods and procedures will also enhance the advancement of reflective practices by students. (Chin, 2001)

"Teachers who redirect questions for clarification or verification, furthermore, challenge young adolescent students to be less impulsive and more accountable for their own thinking" (Beamon, 1997, p. 51). Beamon also found that in addition to developing questions at a high level to promote reflection, teachers need to allow time for the student to respond, referred to as wait time. Without this pause for reflection, students become dependent on the teacher thinking for them and passive about reflection (Beamon, 1997). In another study, Chin (2001) found that when teachers asked wonderment questions and pushed

students for clarification, students reflected and asked more questions that were meaningful. Additionally, if students were given time to reflect and then write in journals, students who did not spontaneously ask reflective questions proved they could do so. This seems to indicate that students need time as a requirement of reflective thinking (Chin, 2001).

In addition to teacher questioning to promote reflective learning, teacher attitudes towards this type of discovery instruction also is a major factor in determining student success in this process. “Teachers’ actions are also central to empowering students to believe that they control their academic future” (Smith, Sekar, and Brandon, 2002, p. 9). Smith et al. support the hypothesis that teacher perceptions of the classroom-learning environment are strongly related to learning outcomes. Their study looked at 178 sixth to eighth grade middle school students. Students were surveyed four times in the study on teacher methodology and the effect on their learning. The study concluded, “This research supports the position that the teachers’ ways of teaching or methodologies influences students’ perception of the learning and what they should do to improve their grade.” (Sekar, and Brandon, 2002, p. 9) Their research lends support to the work of Ochoa-Becker (1999) who argues for a more engaging classroom created by a teacher modeling expectations and clearly defining the learning environment. Smith et al. (2002) found, that successful students were both sensitive to and adapted to the teacher- imposed learning environment. If an instructor hopes to

increase reflective learning, Smith et al.(2002) found the instructor will need to 1) design the learning environment to reflect this type of learning and 2) believe the students in the class are capable of this type of learning, and 3) support the students while engaged in this type of instruction.

As students reflect on their experiences, they will need to think about how the experience affects them. What will they do with this experience, and how does it internalize? What more will the student need to add to the experience of metacognition? One of the methods to aid in reflection is the use of questioning for discovery. (Chin, Brown, and Bruce 2002) They reported that self-questioning is a metacognitive activity, through questioning; students try to connect their prior knowledge with the new information to gain a sense of the idea.

All of these practices help the student to focus on the key concept of reading to learn. As students begin to read with reason, find personal connections, and take ownership of their reading, additional higher level thinking skills can come into play. With the concept of reading to learn clearly identified, students can begin to analyze the information, reflect on the information, and form questions to gain a deeper understanding of the reading.

Summarization

To be successful learners, students need to have the ability to distill large amounts of text into meaningful information that they can internalize and apply to new experiences (McGee, Kirby, and Croft 2001). The capability to perform

summarization cannot be taken for granted; being taught to summarize once at a lower grade does not ensure mastery by the student. As the student progresses, so does the complexity of the subject matter introduced. Movement towards higher-level subject matter requires the reintroduction and refinement of basic skills to support the learning (Wood, Winne and Carney 1995).

McGee, et al (2001) looked at the effect of summarization on developing a knowledge base. They found a correlation between good summarization skills and content knowledge development. In a study on the effects of teaching high school students to summarize, Wood, et al. (1995) found that students at the high school level can gain some benefit from precise instruction on summarization; i.e. explicit instruction on the structure and processes for generating summaries. Wood et al. (1995) found a strong correlation between using summarization rules and quality of summaries of the trained students. They also found that students recalled information at a higher rate when students who were reading elaborate text used summarization. It is more efficient for instructors to teach summarization than to summarize the information for the students. (Woods et al., 1995)

The value in the ability to accurately summarize informational text seems twofold: recalling key facts/information as found by Woods et.al (1995) and using these key facts and information to build deeper knowledge as found by McGee et al. (2001). Without a strong set of basic knowledge, the movement to higher-level

thinking will be severely limited. While summarization can help students achieve basic knowledge, this will not be sufficient in the twenty-first century, students will still need to know how to use and apply knowledge. Students will need look at their thinking as well as their knowledge base.

Questioning

The ability to know how to question is a crucial attribute of a teacher. However, in today's world, the ability to form questions to aid in understanding and develop deep thinking now must become part of the students' skill set. "To know how to question is to know how to learn well" (Chin, Brown, and Bruce 2002 p.547). Chin et al. (2002) defined two types of questions: basic information and wonderment. Basic questions ask for answers found within text or other sources of information. Wonderment questions are at a higher conceptual level and require an application or extension of taught ideas. Chin et al. (2002) found questions of a thinking or probing nature, i.e. wonderment questions, are not often required of students. The authors cite several possible explanations for this phenomenon, including teachers lacking depth of subject matter, teaching style, student fear of negative response of peers or teachers, and lack of instruction in constructing questions. While the creation of wonderment questions was not a traditional student role, Chin et al., (2002) note that students can be specifically encouraged to form these types of questions with teacher modeling, instruction in questioning construction and the creation of a safe learning environment. These

conclusions are supported by Beamon (1997) who found that when students receive support and are encouraged in their efforts to move to higher levels in Bloom's Taxonomy, students begin to generate more types of wonderment questions. Additionally, Chin et al. (2002) finds these wonderment questions can be generated by providing specific time during the class to write questions about the lesson and the use of journals to record questions at home after the instruction.

For students to become active thinkers and questioners, educators must become aware of classroom practices that may inhibit the development of critical thinking and questioning skills. Flick (1998), in a study of two middle school science teachers, found that the teachers did not allow time to instruct students on how to form questions pertaining to the tasks they were performing. The teachers were cognizant of the problem; they felt they were doing most of the thinking (Flick, 1998). One of the skills Flick feels is necessary for comprehension is for students to learn to form clarifying questions while performing inquiry tasks. Flick makes the case that the teachers' role should be one of a readily available resource to aid in the students' quest rather than a provider of predetermined questions for the students to answer. The teacher should not be the heavy hand on the tiller of the ship, but rather the wind that fills the sails, allowing the students to set the general course. Should the students' begin to drift away on an interesting, but off task tangent, the teacher, with the use of questioning, can redirect the students' focus.

Deal & Sterling (1997) stress the need for student-generated questions. Traditionally, teachers brought the questions to the students, students then responded with the "correct" answer. Deal & Sterling (1997) found that by establishing a knowledge base through low-level questions, students' could then apply this base to develop and answer higher-level questions while involved in an inquiry based lesson. Deal & Sterlings' findings build on the work of Dewey (1938) who wrote, "What he has learned in the way of knowledge and skill in one situation becomes an instrument of understanding and dealing with the situations which follow." In another study, MacKenzie (2001) stated students needed to learn how to question phenomena. MacKenzie looked at how a teacher used a constructivist method to teach students how to argue and question. The study of seventh grade middle school students showed that, as the year went on, the number of statements or questions posed by students increased and the teachers' role shifted from teaching questioning to moderating arguments.(MacKenzie, 2001) Myhill, Jones, and Hooper (2006) point out the value of teacher-generated questions for promoting reflection, analysis and inquiry from the students. Myhill et al., (2006) also argue that student generated questions can create the same effect.

Drama and Role Play to develop Critical Thinking

Drama as instruction alone is not the best or only pedagogical strategy for teaching critical thinking but should be part of an overall strategy. "The new

importance of discourse in school-improvement efforts come not from any anticipated substitution of nontraditional for traditional lessons, but from the need for teachers to have a repertoire of lesson structures and teaching styles, and the understanding of when one or another will be most appropriate for an increasingly complex set of educational objectives" (Cazden, 2001, p.56). Cazden argues further that classrooms need to become places where students talk to and listen to one and other. As part of this discourse, Cazden describes how curriculum, divided into episodes or series of scaffolds that build from one to another, allows this to occur. One of these episodes described students inventing dialog and acting out scenarios to develop writing and editing skills rather than the traditional lessons of drill and practice. Students instructed in the basics now have the opportunity to apply and expand their knowledge beyond worksheets to areas of interest of the students.

Support for the concept of drama as instruction is given by Vygotsky (1978) who looked at the play of students as a source of developing abstract thoughts. "In play a child always behaves beyond his average age, above his daily behavior; in play it is as though he were a head taller than himself. As in the focus of a magnifying glass, play contains all developmental tendencies in a condensed form and is itself a major source of development" (Vygotsky, 1978, p. 102). Further, Vygotsky (1978) argues that a child learning opens internal development processes that operate when the child is interacting with people in his

environment and cooperating with his peers. This seems to indicate that as instruction in basic concepts occurs; an opportunity is present for development of abstract thought by using imagination as play.

One concern of teachers considering the use of drama is the effectiveness of the instruction. Morris (2002) reported on a seventh grade class that used drama as part of their instruction. Among other assessments, students would need to create an essay demonstrating skills in application, synthesis and evaluation. Students worked in groups developing dramatic interpretations of the reading material along with small group discussions of the readings. Morris (2002) found that the students achieved the expectations of the curriculum and the teacher. The attainment target of meeting expectations was determined by using the National Curriculum test and analyzing pre- and post-test results. “Through drama students increased their engagement with social studies and often exceeded teachers’ dramatic and assessment expectations” Morris, 2002, Conclusions section, 5).

Drama as instruction, is not to be confused with theater productions. Drama as instruction creates characters out of the realities of the students engaged in the drama. The students are players not actors (Bouchard, 2002). This type of drama is not designed to recreate real situations or portray the lives of the participants, but rather, to allow students to speak from a different viewpoint or in a different voice. (Bouchard, 2002) In their work Structuring Drama Work, Neelands and Goode (2005) dispute the argument of Bouchard (2002) that drama

in education is separate from theater. Neelands and Goode (2005) define theater as a direct experience shared by people when they imagine and behave as if they were someone other them themselves. While Neelands and Goode (2005) differ from Bouchard (2002) in definition of theater, both recognize that drama in the classroom will require involved students to move beyond their persona.

Drama in the classroom seems to be a valid form of instruction. This type of instruction demonstrated increase interest in the classroom, produced academic achievement and is a sound instructional practice. (Morris, 2002)

Summary

The ability to think critically will be a requirement of students graduating from high school. Regardless of whether the student will be entering the work force or continuing with a higher education, employers and instructors at the university level will expect these students to have the ability to think for themselves.

One of the attributes of critical thinking is the ability to form questions regarding materials read. At the heart of forming questions are the skills of analyzing text for key points and concepts, summarizing the information, and forming questions that combine this information and students' prior experiences.

Recently, with the continued emphasis on state wide standardized testing and the desire of some schools and administrators to boost scores, students are not getting the opportunity to experience critical thinking development. Instead, they are being taught to use clues in the text to determine the "correct" answer desired

by the test maker rather than think about their response. Eventually when these students are placed in situations where critical thinking is required, they will struggle.

My research indicates the development of critical thinking skills using summarization, metacognition, questioning, and drama in an emotionally safe classroom could be a way to increase student scores on standardized testing. To teach to a standardized test is a task more suited for Sisyphus. As soon as the students encounter a different form of a question requiring the same content, the student is lost and the effort to teach to the test was wasted. The eligible content of these tests are too broad for such an approach. It would appear that teaching student critical thinking would give students a tool to help them understand the questions and apply their prior knowledge to construct a correct response. Good critical thinking requires judgments and these judgments deepen criteria. (Orenstein et al., 2007) Students with good critical thinking skill will be able to make good judgments on standardized tests.

METHODOLOGY

The purpose of my study is to observe and report the experiences of middle school students taught critical thinking skills through good reading strategies, better summarization skills and instruction through role - play.

Setting

The school is a middle school located in the Northeastern United States. Several K-5 schools feed into the only middle school within the district. The middle school contains grades six through eight with a total school population of approximately five hundred students divided equally among grades 6, 7 and 8. The school is teaming concept based. Grade levels are divided into two teams of three or four core subject teachers each. Team populations range between ninety and one hundred twenty students based on the number of core subject teachers.

The district covers both urban and rural/suburban areas. Traditionally, students from middle class working families made up the school population. Many of the students now attending this school have parents or grandparents who also attended this school.

Recently this district witnessed an influx of students from both extremes of the socio-economic scale. The breakdown of this new population follows a pattern with predominantly white students from a higher socio-economic level arriving from the rural/suburban areas and students of varying race from a lower socio-economic level arriving from the urban areas. Both of these groups are slowly displacing the school's historically predominant group of students from middle class working families. Many students from the urban parts of the district walk to and from school while those students in the suburban/rural area ride buses

to and from school, adding to the division within the student population. The study takes place during the fall semester.

Participants

The participants were entering the eighth grade at the start of the study. The class consisted of 26 heterogeneously grouped students. All the students fell within the ages of 12 to 13 years old. No student was repeating the grade. There were 12 female and 14 male students. Four students had individual education plans (IEPs); of the four, two are gifted students with gifted individual education plans (GIEP). Creation of an IEP or GIEP for these students was determined by individual testing, classroom observations, parent interviews and teacher input. The results of the data gathered were processed through the Pennsylvania Dept. of Education Special Education branch to see if the student qualified for the program.

Instruction for the IEP students was in a self-contained classroom for math, language arts, and reading. These IEP students were included in regular classrooms for science and social studies. The GIEP students were one grade level ahead of their fellow students in math. The GIEP students received mathematics instruction in an honors math class conducted at the high school. Additionally, these GIEP students received instruction in a self-contained classroom once a week within the middle school. Other than the math and self-contained instruction

modifications, the GIEP students were included in all other classes in the middle school.

Procedures

Initial work on my study involved gaining permission from the Moravian College Human Subjects Internal Review Board (HSIRB) (see Appendix B). The board reviewed my proposed study to insure the participants would experience no harm. Concurrent with the HSIRB review, I sought permission from my building principal (see Appendix A) to conduct the study. Within the permission request, I outlined the proposed question, reasons I felt the study was beneficial for the student body, and the methods for maintaining confidentiality for the participants. I obtained student consent to participate in the study though a letter sent to all the parents/guardians of students within the class I proposed to study. (see Appendix C) The letter included the reasons for the work, the means of student confidentiality, and information on how to withdraw a student from the study. Collection of data for the study began mid September 2007 after gaining approval of the HSIRB, my principal, and the parents or guardians of the students who wished to participate.

Field Log

I created a field log to record my observations of students and my reflections on the observations. The log became my repository for annotations of student actions and conversations. The log also served as location for my

interpretation of these annotations. I delineated the observation from my reflections by bracketing the text containing the reflective entries. Bogdan and Biklen (1982) caution researchers to maintain this separation throughout the study. The separation of observed data and reflective commentary becomes important during the analysis of the work. My field log became the primary source of data for the study.

Participant Observations

I was a participant observer during the study. I maintained my role as a teacher but also adopted the role of observer. I recorded my observations on a legal pad that I kept on my desk or with me while I taught. These observations consisted of a few key words or a sentence or two. During class change I expanded these observations. I continued to expand these observations during my planning period in the afternoon, adding my reflections. At times, I recorded observations longhand or entered them in my computer. At home, I added details and recorded these observations and reflections into the field log. Initially I planned observations around lessons I would present. As the study continued, I also recorded observations when students surprised me with comments or actions that seemed to show critical thinking or a serious lack of critical thinking.

Student Surveys

Students participated in a reading a survey. (see Appendix E) The reading survey asks students to identify what reading skills they apply to interpret

expository text and handouts. This survey allowed me to gain insight into the use of reading skills by my students. I conducted the reading survey prior to recording field observations the study. This survey provided data for comparison to observation recorded in the field log on summarization and questioning. The survey was adapted from a survey created by the University of Tennessee English Department to gauge the reading habits of incoming freshmen. The survey questions students on the use of best practices for reading expository text. Students responded to the eleven questions using a five-point scale, one indicated the student never used the practice and a five indicated the student always used the practice

Student Work

I collected samples of student work throughout the study. I used these samples to look for evidence of critical thinking, summarization abilities and the effect of role-play on responses. Sample work included student responses to open ended questions that I analyzed for evidence of critical thinking. I assessed critical thinking using the CTM model outlined by Ketterlin (2003). With CTM, assessment is at two levels, first on content knowledge and secondly on showing the reasoning for answer. Ornstein, Pajak, and Ornstein (2002) define critical thinking as “skillful responsible thinking that facilitates good judgment because it (1) relies on criteria, (2) is self-correcting and (3) is sensitive to content.”(p.162) Additional student work in the form of completed summarization activities was

examined for evidence of identifying key concepts expressed in my students' own language. The ability of students to summarize correctly aids in the development of content knowledge (Winne and Carney1995). This content knowledge then aids in the development of criteria to facilitate critical thinking. The samples of student work were included in the field log. The student work samples provided a balance to my observations of the students while they were working and the data recorded in my field log. The purpose of analyzing and comparing data from various sources is referred to as triangulation of data, the attempt to validate findings by comparing data from various sources and methods. (Ely, Vinz, Downing and Anzul, 1997)

Data Analysis

Field log observations were coded and assigned bin and theme locations. I analyzed classroom observations for evidence of application of the summarization and questioning skills without prompts from the instructor. I examined student work in questioning skills based on a modification of Bloom's Taxonomy (see Appendix F), looking for evidence of growth in the use of higher-level questions. Student surveys assessing good reading techniques were analyzed for changes noted between pre and post training responses. I compared participant student grade averages versus non- participant groups. This range of data and methods of analysis provided for triangulation of the results.

Summary

During the study, in addition to the established curriculum, the students were instructed on specific methods of reading and summarizing expository text, constructing questions based on the reading using Bloom's Taxonomy of objectives, and engaging in role-play. The students were expected to apply these skills in summarization, questioning, and concepts discovered during role-play to the readings assigned in the class.

Rather than isolate the skills of summarization and questioning in a test preparation atmosphere, my study looked for evidence that continued instruction in reading and analyzing text, high level questioning, and role-play as instruction gave the students the opportunity to expand their critical thinking skills. During the study, I collected and analyzed data from various sources to determine if developing critical thinking skills through reinforcing good reading strategies, better summarization skills and instruction through role –play and questioning skills showed a correlation in increased observable critical thinking and growth on measurable standardized testing.

The Students' Story

Eighth graders are an odd bunch. One moment they are playing with pencils, using them as imaginary skateboards, and the next you get a call from the nurse to allow a girl in your class unlimited use of the ladies room because she is pregnant. Monday they use the writings of John Locke to argue against eminent

domain. Tuesday they cannot remember to bring a pencil to class let alone remember who John Locke was.

Yet despite all their idiosyncrasies and raging hormones, I enjoy teaching them. They are on the cusp of discovering who they are and where they want to go. It is an exciting, stressful, hilarious, and frustrating time of their lives, and I enjoy helping them navigate this part of their life's journey.

When people inquire what I do for a living, and I tell them I teach eighth graders, many of the questioners respond with a cynical "good luck" or "better you than me." I nod and respond with "O; it's not bad; they are just kids. I enjoy teaching them." Inevitably, I hear a story about an injustice inflicted on the storyteller by some teenager, and how in "their day" kids knew their place or were put into it by "a good slap on the face." Sometimes I think I teach in an effort to keep these people out of teaching. I am always surprised by the age range of these storytellers; apparently "their day" was somewhere between the nineteen fifties and the mid nineties.

Here I am alone in a room full of hormonally overcharged "need their faces slapped," pencil playing, loud, shy, tall for their age, small for their age, outgoing, introverted, just discovered perfume/aftershave but without the nuance of how much to apply, eighth grade students. Welcome to my world and to this year's story.

EVERY STORY HAS A BEGINNING: THIS IS MINE

Pennsylvania System of School Assessment testing looms out there, like some sinister iceberg shrouded in the fog. My classroom/ship sails an erratic course. In the pilothouse, an argument is taking place, hard to port, show them the question type, pretest, analyze the results teach what was missed, retest, analyze. No, hard to starboard, help them learn to think critically, provide educative experiences, facilitate their growth. Suddenly the lookout shouts a warning "Iceberg dead ahead."

I debate how best to navigate these waters. My research shows a connection between getting students to think critically and improving standardized test scores (Ketterlin et al., 2003). Yet many in education are shifting toward a test-based curriculum to improve scores. Therefore, the deliberations continue both sides arguing valid points. I struggled with this, looking intently at both sides, until I looked out in my classroom. Seated before me was the unheard argument: the students. What will be best for them? Good thinking is permanent; the memorization of disconnected facts is fleeting. I will steer the class towards the thinking: now to get to them to think critically.

Every year brings its challenges but this year was different. Along with teaching, I would be conducting a study on the effect on developing critical thinking skills through reviewing summarization skills, learning how to question, and the use of drama/role-play in the classroom. I would also be looking at

whether students become proficient on standardized tests without teaching to the test.

This is my second study. During a previous graduate course, I conducted a pilot on why students did not do homework. During the pilot study, the students were excited to be involved. They expressed interest in the work, had questions about college and about how I was going to use the study. The students involved in the current study reacted much differently.

During the weeks before the start of my study I told three of my civics classes I was going to a graduate class, and that as a requirement, I needed to conduct a study and write a paper on my findings. I would decide which of the classes would be the subject of the study. All of the classes had some questions, but the enthusiasm of the previous year's students was not present.

After a few weeks of building classroom procedures and getting to know the students, I had decided on a class to study. I gave this class the reading survey to gain a sense of how they viewed their reading skills. The class I chose had a large number of students. I wanted a large initial pool of candidates for the study in case I had a larger than expected number of non-participants. This class also had a more diverse student population. Additionally, this class convened at a time that allowed me time to record my observations in my field log almost immediately after the class. When I introduced the study to this class, I knew this group was different.

The reaction to the study by this group was quite different from the pilot study group. The pilot group had many questions about my college, how long I had to go to school, and how much work was involved. During the pilot study, the students ask questions about how the study was proceeding. This group seemed to talk about the study between themselves. During the introduction to the study, I observed students asking questions of other students, but they did not ask me the questions. Throughout the course of the study, the students did not make comments when I made notes on the legal pad for my observations. They did not ask questions when I gave them surveys. The students participated in the study but did not become as involved as the pilot study group did. This group was willing to be observed, but not concerned with the observations.

A Dramatization: The Introduction

Mr. Hontz: "As you know, I am in school doing my masters work. I needed to find a class to study, and you win!" [Very serious looks around the room] *Why the concerned looks? This should be fun. What did I do wrong?*

Mr. Hontz: [passing out permission letter.] "Please read the information in the letter I am giving you." [As the letter is distributed, and the students begin to read it, the students talk among themselves about the study.]

Sally: "What is this?"

Sue: "It's that thing Mr. Hontz is doing for school."

Sally: "What do we do?"

Sue: “I don’t know.”

Mr. Hontz: “Make sure you look at the section explaining how you can withdraw from the study” [I read the sections on withdrawing and workload to the students.]

Mr. Hontz: “Are there any questions?” [Not one question.] *Why are there no questions? Don’t they care? Is it too hard for them to understand? Why won’t they talk to me?*

Mr. Hontz: “This whole idea of critical thinking may not be easy for some of you, but we will get though it together.”[There is some student-to-student chatter about the study. Then an outburst from Bill]

Bill: “If you teach us, we can do it.” *I feel better about the introduction now.*

Mr. Hontz: “Well I hope so. I need the permission slips by Friday or sooner.” *I am concerned about the study. The students seem passive about the idea.*

[Bell rings, and the class is dismissed]

The following day when I began to collect the permission slips, I was surprised to find fourteen of the possible twenty-seven student participants had brought the completed slips. All of the slips indicated these students would participate in the study. This particular class had developed a reputation for forgetting or not doing homework, so I was expecting to have difficulty in getting the students to bring in the permission slips. Students who did not bring in their slips personally told me their reasons they did not have them and promised to bring them the next day. It seems my initial concern about apathy towards the

study was unfounded. My students returned twenty-two out of a possible twenty-seven permission slips.

Bloom's Taxonomy meets the Eighth Grade

My plan was to begin with instructions on how to question. Chin et al. (2002) states "To know how to question is to know how to learn well." (p.547) I had intended to teach students how to form higher-level questions as defined by Bloom's Taxonomy. (see Appendix F) I developed this plan based on the research presented by Chin et al. (2002) suggesting that students did not question at high levels because they were never instructed how to do so.

The lesson began by having the students read two sections in their civics book on citizenship and the rights, duties, and responsibilities of a citizen. They then wrote two questions about each passage. I gave no further instructions other than to write these questions. Typical student-generated questions were on the knowledge level: Who is a citizen? What is naturalization? What is the office of citizen? Tell the duties of a citizen. What are two responsibilities of citizens? What are the rights of citizens? Interestingly, all of the questions are variations of the sub-titles of the sections in the text. After the students finished writing their questions, I gave each of my students a checklist of question types based on Bloom's Taxonomy. (see Appendix G) I then explained that we would be looking at how we use questions to learn and how questions can make us better critical thinkers.

Mr. Hontz: “Look at your questions. Use the chart and try to figure out what level your questions are on.”[Students are using chart] *No questions from the students. No one asks what a taxonomy is or who Bloom was. They cannot know this but they do not ask!*

Mr. Hontz: “Bill, what kind of questions did you write?”

Bill “Ah, [pauses searching the check list] Knowledge.”

Mr. Hontz “How do you know?”

Bill: “I looked at the chart.”

Mr. Hontz: “How do you know it is a knowledge question?”

Bill: “I ask for a list of duties.”

Mr. Hontz: “Good, Let’s try a few more.”

I asked my students to rank their questions by using the chart. It seemed that the students were comfortably performing this task. I then asked a student to read his/her question and the other students to rank the question. This was much easier than it sounded because all the questions the students wrote were at the knowledge level. I instructed the students to keep the checklist for future use. The class answered the lower level questions the students had created as a review of the sections and the lesson finished.

The students easily identified a knowledge level question. This was not surprising. These were the types of questions my students were asked to answer for most of their school career. What I was looking for was evidence that the

students were reading the text and asking higher-level questions as they were reading. Chin et al. (2002) found that developing this higher level questioning ability was not expected from students. Students traditionally answer lower level questions because teachers and textbooks require students to answer lower level questions and students do not see models of good questioning. I hoped that if students became aware of the different levels of questioning, they would begin to use questioning to help improve comprehension and critical thinking. I did not foresee the problems I would have in getting students to adopt a new way of looking at questions.

In a follow up lesson using Bloom's Taxonomy, I took a different approach. I would do the questioning and the students would analyze the questions and identify the level.

Mr. Hontz: "Get out your question checklist, and we will play a quick game. I will ask a question, and you will answer it AND tell me the type of question. " [Bill raises his hand]

Mr. Hontz: "Bill?"

Bill: "That's not a real game."

Mr. Hontz: "I am glad you wanted to go first. What is the capital of Pennsylvania?"

Bill: "Harrisburg!"

Mr. Hontz: "What type of question is that, Sally." [She looks confused]

Mr. Hontz: “From the checklist, Sally.”

Sally: “Oh, ah, ah, a name question?” [She is right; name is in the list of terms under knowledge]

Mr. Hontz: “OK, but what level of question?”

Sally: “Ah [a classmate whispers "Knowledge" from a nearby desk.] knowledge?” *Well it is a start; some one knows what type it is.*

Mr. Hontz: “Are you sure?”

Sally: “No!”

Mr. Hontz: “Sally, call on someone to help you.” [Sally calls on the student next to her who whispered the answer.]

I continued to ask low-level questions, and the student had no problems finding the correct level of the question. I moved the topic from geography locations and lists of duties of citizens to the area of social roles. I asked lower level questions about the roles students play in their families. The discussion then turned to the finances of raising a family. After several factual questions on finance, I ask: “How could the number of children in a family affect the life span of the children?” [Most of the students are looking at me after I ask the question] *I feel most of the class realizes this is a different type of question. I think the students may like this type of question. They (most) look more alert.*

Sue: “If you have less kids, you can spend more money on them, like for shots and baby food and stuff like that.”

Mr. Hontz: “Good answer.” [I ask how this question is different from the previous questions. Several hands go up]

Mr. Hontz: “Jill.”

Jill: “It’s not a fact answer [pause]; you need to [pause looks at checklist] explain.”

Mr. Hontz: “And that makes it a …? [Looking at Jill]

Jill: “A comprehension question.”

I was thrilled at the response to the question and to the analysis of the type of question. Regrettably, this was the zenith of the student application of Bloom’s taxonomy.

Over the next few weeks, I went back in an attempt to get students to identify the higher levels of questioning. During this period, I discovered that I was unable to clarify the subtle distinctions within the categorization of questions for the students. My students had great difficulty in attempting to do the classifications of their questions.

The students’ greatest struggle occurred with the terms used in the checklist. For example, in the comprehension question section one of the terms is “defend”; in the evaluation section, the term “supports” is used. In the dictionary we used in the classroom, defend is defined as “to support, maintain or justify” while support is defined as “to show or tend to show to be true; help prove, vindicate; or corroborate.” Additionally, students struggled with repeated terms.

In both the evaluation descriptors and the comprehension descriptors, the word "explains" appear. My students had great difficulty in differentiating between the two. They became frustrated in their efforts to try to write questions of differing levels from their readings. Even when students attempted to research definitions of terms difficulties arose. During one exercise, Sam constructed the question: Why is it important for citizens to do their job as a citizen? When I questioned at what level he thought the question fell, he quickly identified it as a comprehension question. I asked why he thought so. "The question wants you to explain why you should do your job as a citizen." I asked Sam how he would answer his question. "Well, you should do your job as citizen because citizens are really the county. If no one did their job, we wouldn't have anything like police and firemen. Like in the book. If nobody voted, we couldn't have a government; people would just do what they want. There wouldn't be any laws." I asked Sam why he did not think his question was an evaluation question. "I don't know. It seems like a comprehension question. I read, the book and now I can tell you what is in the book. I understand what the book said."

Sam seemed comfortable with constructing his question to answer facts from the book. He did not seem to see how much deeper his question and answer were. I asked him if he thought he was making an evaluation of why citizens should perform their duties and carry out their responsibilities. "I don't know maybe." I asked Sam to look at the evaluation section again to see if his question

could fall into that category. My conversation with Sam continued, “When you answer your question, aren’t you evaluating if citizens should do their jobs?” Sam responded with a shrug of his shoulders “Maybe, but I am just saying what’s in the book.” I told Sam that I thought his question could have been an evaluation type question because he asked why it is important and did not ask for a list of the duties and responsibilities. This did not satisfy him. “Maybe, but I get confused with all the levels. It’s hard to figure out where the questions should go. Sometimes they can go in two places.”

Sam’s responses were not atypical. Many of my students expressed how difficult it was to place questions into categories. “Mr. Hontz, this makes my brain hurt.” “I can’t tell the differences between application and synthesis.” My students were becoming overly frustrated with this process, as was I.

My students made a good faith effort to use the checklist and apply what they knew of the system. However, when I reviewed my students’ questions, I realized my lessons caused my students to construct lower level questions. My students were writing questions that they could easily fit into the category they knew best; knowledge level questions.

My goal was to develop critical thinking. What occurred was that students were reading to find knowledge facts to make up questions rather that constructing wonderment questions. Chin et al. (2002) suggested that time be given in the class for students to reflect and construct these wonderment

questions. What I had done was to give my students time to construct questions to fit into a classification system that they did not fully comprehend. My students migrated to the level they knew and were familiar with resulting in stagnation of growth as questioners. I had created an artificial environment for growth..

My overall goal was to get students to develop critical thinking skills and use these skills to do well on standardized tests. This attempt to teach Bloom's Taxonomy to my students did not help them. Rather than have the students write the questions, I decided to modify my questions in the classroom and on open-ended questions to reflect higher-level questions. This gave my students the model for higher-level questions as suggested by Chin et al. With the use of modeling and open-ended questions, my students had more time to think about the response to the question rather than try to determine the level of questions asked.

Measuring Critical Thinking

During the study, along with the work in summarization, drama, and role – play, I introduced critical thinking measurement activities to my class. For my study, I modeled essay questions on the sample found in the study by Ketterlin-Geller et al. (2003) looking at how to measure critical thinking in addition to measuring curriculum content recall. I created fictional occurrences or an open-ended response based on the concepts we had covered in class using traditional instruction methods, lecture, notes, and teacher directed questions and non-

traditional methods such as drama and role-play. The overarching theme of the unit was government. The content areas included types of governments, citizens' role in government, and individual freedoms verses common good of society.

In an effort to get students to think deeply about their responses, I called the activity One Minute Essays, although I scheduled the activity for ten to fifteen minutes. I used the name so my students did not become obsessed with the number of paragraphs or length of the response. I assigned the essays a quiz grade weight and each essay had maximum score of three. Scoring a one on an essay would not adversely affect a student's grade point average, a concern of some of my students. Interestingly, during the first few assessments, many students identified as above average by grade point average scored significantly lower than my others students. I feel this was due to the method of scoring. To score a three, the response must contain the correct use of the concept, a demonstration of how the concept applies to the prompt and reasoning behind the response. For many of my "higher achieving" students, giving reasons for their answer and demonstrating its use was difficult. They knew the concept but had problems explaining the reasoning and application of their answer. When I first began this type of assessment, several of my highest average students expressed their frustration with the quiz. "Why can't we just have the other test? The multiply choice one. I know its absolute power but I can't tell why." As we continued this

type of assessment, these students grew accustomed to the format and began consistently scoring threes.

Students could score a two if they made a case for their response even if the use of the concept was flawed. In one instance, a student attempted to use the concept of theocracy where the essay required the application of totalitarianism in answering the prompt; “How would you describe the type of government in place currently in North Korea?” The student clearly had a grasp of the term theocracy and attempted to justify her answer. “In North Korea the people worship Kim el Zong (sic) he makes up all the rules and the people pray to him. He is like their god. And his dad was like the god before him. And he has a group of people who help him interput (sic) the rules his dad made up. It’s like when we did the play (a classroom dramatic interpretation of theocratic rule) when Jill got stoned to death for talking to the boy because she broke the rule of law from the book of law.” The student went on with her reasoning along the same vein. For her efforts and because of her argument, I scored her work as a two. I also responded to her in writing, pointing out her misunderstandings and asking for clarification of her idea about totalitarianism. On a standardized test, if the student had a misconstruction and selected the wrong answer, all I knew about the student was that she did not get credit for the correct answer. With the use of this type of assessment, I know the student may have a problem with the concept of totalitarianism, but I also know that the student is comfortable with the concept of

theocracy and can make an argument using the idea, show how it is applied and how it is connected to her experiences. In a follow up conversation with the student, she explained, she was confused about totalitarianism, but she could see how people might think the dictator could be like a god to some people so she wrote about theocracy. I was encouraged by this conversation. This particular student did not do well on previous traditional tests. If she was unsure of the answer, any response, A, B, C, or D would do. She would pick a letter at random. With this type of test, she was attempting to justify her answer, explaining her view. The fact that she scored a two while the other "smart kids" scored a one, which also gave her enormous pleasure.

I developed a pattern with the activity to help build content understanding to aid in critical thinking development. The first essay normally dealt with a concept and was an assessment of knowledge. For example, an alien comes to our class as a visitor. It wants to know what this thing - "democracy" - is. How will you explain democracy to the alien, Me Goorp? Subsequent essays required higher-level thinking. The prompt I used towards the end of our section on democracy was: "The United States people would be better served with a just Monarchy rather than the government in place currently. What is your opinion?" When I gave my class this prompt the students did not complain about the difficulty, rather they began arguing their points among themselves. They seemed willing to accept the challenge; even more, they seemed able to respond to the

prompt. I had to end the classroom discussion so that the students could begin to write.

Overall, my experience with this activity was positive. Most of my students made an effort to answer the questions. Many students seemed willing to take chances with their answers and write their reasoning behind their responses. I believe my students did so because they could get credit for demonstrating thinking beyond not just recalling. The grading ramifications of these essays were minimal; if they were completely off the mark, there would not be a major change in grade. I feel the students wrote because their thoughts and reasoning mattered. This type of assessment gave me insight to specific difficulties and strengths of individual students. I could address both on a one -to- one basis rather than look at a class average for a test. As the study continued, students began to show growth in their thinking. They not only could recall the concept but also give reasons for their answers. One unexpected event from this activity was an increase of the knowledge gain in my civics class used in the language arts classroom. My team member, who teaches language arts, remarked how students are using concepts of justice, responsibility, privacy, and other social studies content in their writing. As a result, we now discuss what concepts I will be covering, and he adds language arts and reading activities matching the content.

Summarizing

The continuing focus of my study was to look for methodology that would improve students' critical thinking skills while allowing me to teach for success on a standardized test without falling into the trap of teaching to the test. When I read Paulo Freire, I recognized how schools were beginning to take the humanity out of teaching and replace it with an inhumane standard of artificial achievement. Freire (2007) wrote, "Knowledge emerges only through invention and reinvention, through the restless, impatient, continuing hopeful inquiry human beings pursue in the world, with the world, and with each other" (p. 72). If I was to challenge this shift from a student-centered education to an achievement-centered education, I had to recognize my complicity in the ongoing change. I could not simply duplicate work sheets from experts in the field of test taking achievement and have my students fill in the bubbles, hoping that with this exposure to a sample test, they would gain the rank of proficient. This proficient rank is not learning; it signifies the students' ability to recognize previously memorized patterns from sample tests. I myself have fallen into this trap. "You will see a problem like this on the PSSA we will take in the spring. How do we solve this type of problem?" My quest became how to have students become creators of thought, not receptacles of disconnected information, and be successful on the test. Education must become acts of cognition and not a transfer of information. (Freire, 2007)

During my research, I found studies that seemed to support using summarization to aid in building a knowledge base and achievement. McGee, Kirby, and Croft (2001) connected summarization with the development of content knowledge and problem solving. Their research points out the benefits of using summarization to increase content understanding and problem solving. Wood, Winne, and Carney (1995) found that when students summarize correctly, there is a strong connection to information recall, building a knowledge base and a modest gain in achievement. Armed with this information and the inspiration to find a way to teach for knowledge rather than memorization, I planned to review summarization skills I was sure my students possessed. When I attempted to implement the use of summarization in my classroom, I discovered that a skill many teachers assume their students possess, was sorely missing from mine.

Initial Lesson

Mr. Hontz: "What is a summary?" [One hand is up. Other students are avoiding eye contact.]

Mr. Hontz: "You have heard of this …summary" [A few students nod their heads in agreement, most to try not be seen.]

Mr. Hontz: "OK, what is a summary?" [One student volunteers to answer but cannot articulate.]

Bill: "It's like… a, I really can't tell…Like you read and then tell a story."

I was surprised at the lack of comprehension in this area. I had anecdotal evidence that these students received instruction in summarization. My classroom is next door to a seventh grade Language Arts classroom, and I had overheard the instruction on summarization. Every year, at the beginning of school, the class reviewed the summarization skills. Almost weekly, thereafter, I overhear, “Read the passage on page “whatever” and summarize the work.” Now in September, the following year these same students cannot explain what or how to summarize.

Mr. Hontz: “Is it (summarization) a story?”

Sally: Yeah, a story with plot characters and …and an end. You tell the story.”

I asked several more question about stories and summarization and if they are the same. Unfortunately, I could not lead the class to the concept of summarization. They kept going back to a summary as a story. Finally, I told the students my concept of summarization.

Mr. Hontz: “A summary is a retelling of the information with details but in the students, that would be you, own words. Now repeat after me [pause] ready? A summary is retelling of the information with details but in the students’, that would be us, own words.” [The students mumble through.]

Mr. Hontz: “Oh, that was weak. Let’s try again. [Pause] Ready? A summary is retelling of the information with details but in the students, that would be us, own words.” [The students do a reasonable job this time.]

Following this exchange, we explored the meaning of expository text. The class and I made comparisons between textbooks and novels. Finally, I introduced the summary template (see Appendix H) and the following question: How does attending school protect American values? The students worked on the activity in class. As the students read, a few jotted down details from the text on to the template. The majority of the students read the entire passage and then started to fill in the template. *How do the students who filled in the sheet while reading know they are choosing the details?* As the students were working, I observed several counting the number of blocks for details (there are nine). One student asked if all the blocks must be filled in. *Why the constant focus on amount one needs to satisfy the minimum?* I used this question as an opportunity to re-enforce the definition of a summary.

Mr. Hontz: “What are you supposed to put in the blocks?”

Tom: “The details from the section.”

Mr. Hontz: “Do you copy the information?”

Tom: “Yes.”

Mr. Hontz: “Tom, repeat after me. A summary is.” [The student quickly interrupts.]

Tom: “No, I need to use my own words.”

Mr. Hontz: “Good, now if the section has only four details, how many would you write?”

Tom: “Four.”

Mr. Hontz: “That makes sense. If the passage had fifteen details, how many would you write?”

Tom: “Fifteen.”

Mr. Hontz: “Good. Now how many blocks do you need to fill in?”

Tom: “One for each detail.”

Mr. Hontz: “You got it.”

As I continued to walk around the room checking on students, I overhear two students discussing how to answer the question.

Ed: “Where does it say we go to school?”

Cal: “I don’t know. Maybe it’s in the list of citizen rights.”

Ed: “What did you write for the main idea of the story?”

I went over to the two students to see what they were trying to summarize. As I approached, Ed turned towards me and said, “I don’t get it.” I asked Ed exactly what he did not get. He told me that he could not find “anything” on school. I was surprised that he did not find “anything” since two sections of the text the students were to read contained the subheadings “Education Rewards” and “Teaching Young Children.” When I questioned Ed further, it became apparent that both Cal and Ed were summarizing the wrong sections of the text and then trying to answer the questions. Both of these students have earned the rank of below basic on

standardized testing. These are the very students that I was told would benefit from the use of practice tests to improve their scores.

I feel some in education believe that it may be most effective to have these students take a practice test, analyze what questions they got wrong, and then identify the state curriculum anchor and the corresponding state eligibility content. Then have them retake a new practice test after focusing on the missed question. Rather than having test results dictate my students' curriculum, I wanted students to improve their scores by using critical thinking skills. I began with Ed's question: I don't get it. He had used this question from the beginning of the year. It was his favorite question. He seemed to have developed this question as a method to get teachers to think for him and give him an answer the teacher will accept.

Mr. Hontz: "What don't you get?"

Ed: "Everything" *Ed seems frustrated.*

Mr. Hontz: "In the beginning there was a great void. Nothing existed, as we know it, not even time. [Both Ed and Cal are looking at me strangely.] Then something happened, a great explosion, unimaginable in size and power [Ed puts up his hand] Yes Ed."

Ed: "What does that have to do with the question?"

Mr. Hontz: "What question?"

Ed: "The question about school."

Mr. Hontz: “I thought you said you didn’t get anything. So I started at the beginning. What don’t you get?”

I continued this conversation with Ed and Cal for the next few minutes. Eventually we established that they were working on the wrong section of the book, and it would have been very difficult to answer the question using the information they were summarizing. Both students needed more help in the summarization. They both were copying the text verbatim. However, at the end of our conversation, they both realized that if the answer they are looking for is not in the text, there is a problem. How they will solve that problem continued to be an issue. However, with students now actively in the process of learning, they began to create their own learning strategies to use on standardized tests.

I continued to work on summarization skills and content knowledge. I assigned my class two passages to read concerning the concept of common good. The class summarized both passages and answered the question: When an American turns eighteen, should he/she be required to perform two years of public service? As an aid in answering the question, the class brainstormed a list of twelve possible activities that would count as public service.

Before I gave the students the assignment, I began the class with a review. Mr. Hontz: “What is a summary? [Looks of concern from several students.] *I am not sure why. We did the same question a few days ago!*

Bill: “A story.” *At least they are consistent. I will let that answer out there and try for some classroom consensus on the term summary.* [I rub my chin, trying to look like I am thinking about this answer. There are no student volunteers, so I pick a student.]

Mr. Hontz: “April, what is a summary?”

April: “Finding details!”

Mr. Hontz: “OK, Donna, how about your opinion.”

Donna: “Listing facts.”

Mr. Hontz: “OK, listing facts, finding details. We are getting warmer. [Liz raises her hand] Liz?”

Liz: “A story.” *I need to fix this now!*

Mr. Hontz: “I’m not sure I like the idea of a summary being a story. Would this be a summary? One day Goldilocks was walking in the woods, and she came upon a house. She looked in the window and saw three bowls of porridge. Is this a summary? [Bill is in the process of inspecting his knuckles.] Bill?”

Bill: “No, that’s the three bear’s story. *Why not call it Goldilocks?*

Mr. Hontz: “Liz told me a summary was a story.”

Bill; “No, it ain’t that. It’s like we did the other day. You know, you read stuff and write it down.” *He can inspect knuckles and listen. Good!*

Mr. Hontz; “OK, we read information, not stuff, and write down what? [Nancy has her hand up] Nancy?”

Nancy: “Facts and details?”

Mr. Hontz: “Do we copy the facts and details? *This is painful. I hope it gets better*. [April waives her hand for my attention] April.”

April: “You use them to write what you read in your own words.” *Thank God!*

Mr. Hontz: “Good, so summarization is when you read information, like in our textbook, look for details and facts, and then use these fact and details to put all this information in your own words.

Mr. Hontz: “Sam. What is summarization?” The student successfully repeats the definition.

I told the students what section of the text to read and handed out the summarization template. The students began the work. I checked on Ed and Cal. Both are in the right location of the text, and both are copying sentences verbatim out of the text before erasing some words and replacing them with their own words. I asked if it would not be simpler to just read and try to write their own thoughts. Both told me no. It was better for them to copy the “stuff” from the book then to try to “fix it” in their own words. I was satisfied with their solution. For the remainder of the study, both Ed and Cal used the summarization template. I noted later that depending on the complexity of the reading and the questions asked they did not always use the copy and fix method of summarization. During less complex reading and questions, they both used their own sentences. When the reading was complex, they both returned to the copy and fix mode. I was initially

upset at this observation. With reflection, I decided that it was acceptable. During a probability and statistics course I took, I was frustrated, and more likely jealous, of the ability of some of my classmates to solve complex problems quickly. When I asked how they could work so fast, many told me they did some of the calculations without the aid of a calculator, particularly cubed and square roots. I would be entering the numbers while they already had the results. Eventually I got to the same answer as my classmates. Ed and Cal used their "calculator" for the summarization. They will eventually get to the same results as their classmates. Ed and Cal invented their "calculator." It is theirs to use whenever the need arises.

I was concerned about the apparent failure to recall the definition of summarization. It seemed to indicate that the students have not really internalized the concept of summarization or are choosing not to answer. I felt it was the former; some students did not grasp the concept. In observations of the class during the review of the definition of summarization, several students appeared not knowing how to answer the question. During the study, when I looked at the student work, it was evident that they could do summarization fairly well when provided a template. I was apprehensive that some of the students would not be able to summarize passages without the template. After consideration, I decided to allow the students to use the template if they wished. I encouraged students that showed difficulty with summarization to use the template. My feeling was that if

the students were comfortable using the template, then they would do the summarization.

We continued to review the definition of summarization and practiced summarizing sections of the text to answer questions proposed. The students became more comfortable with the process. We were summarizing and answering questions using our own words without merely parroting the book. Were all my students experts in summarization and providing brilliant answers? Of course they were not. Some students did the minimum to get by and keep a low profile. While others found a method to cope with the summarization and a few began a transition from concrete thinking to abstract thinking. Depending on the day, any one of my students would display any one of the traits mentioned. It is eighth grade: every day the same students come to my class; I just do not know who they will be that day.

Play and Critical Thinking

"--The play's the thing, Wherein I'll catch the conscience of the king

(Shakespeare, Hamlet II ii 605)."

What would eighth graders want to do rather than be in school? Some would sleep, but not for long. Eventually they would tire of sleep. Others would eat but soon they would have had their fill. Still others would hang out with their friends, but friends can only entertain for so long. What would they do? Watch

these students long enough and you will see that they all play. Play is the device wherein I'll get them thinking thrice.

To add play to the class, I decided to incorporate drama in the class. Vygotsky (1978) wrote that in play children develop skills needed to engage in critical thinking and while interacting with their peers, an internal learning process opens. Drama allows students to inter act (Neelands and Goode 2005) and engage in play.

The key to successful use of drama in the classroom is establishing a safe classroom where students feel they can take chances and make mistakes without suffering embarrassment. I began this process by introducing simple rules for drama activities. 1. There is no right way to "act" the part but all acts must be within the school rules. 2. There is a bubble of personal space around everyone. No one can enter this space. 3. Participation is expected but you may not participate if you are not comfortable. If you do not participate, you still must observe and record your observations and thoughts in an observer's log for review and conversation with me. 4. The drama stays in our classroom 5. Relax and have fun.

Show the Word

To introduce drama, I had the students warm up with an activity I called show the word. Professor Anne Finlay taught me this activity during a drama in education course at Moravian.

Mr. Hontz: “Today we will begin to learn a different way to think. I know you all think you can think, but do you ever think about how you think? [There are many puzzled looks from the students. No one speaks.] *They have no idea what I am talking about. How will this work*? The first thing we need to do is stand up. [Students stand] Push your chair in and stand behind your desk. [The students are standing looking at me.] *Are they ready? Better question-I am I ready?*

While the students were standing, I reviewed the rules we had established for the drama activities. The students recalled the rules, and no one opted out. I also laid out the procedure for this activity. I would say a word. The students had five seconds to think how the word would look as a sculpture. I would then say, “action,” and the student had two seconds to build their statue as they thought the word would look. After two seconds, I said freeze, and the student had to remain as statues. A few seconds later I said, “relax,” and the students would return to normal waiting for the next word. During the activity, students could not talk.

Mr. Hontz: “Everyone understands what to do?”

Sam: “It’s like Simon says.”

Mr. Hontz: “Not quite: you decide how to make the model of the word.”

Sam: “What?...”

Ed: “I don’t get it.”[Some students are beginning to grow impatient with the activity] *This will be a disaster*.

Mr. Hontz: “Let’s try one and see how it goes. Ready? Sam? Ed? OK. The word is happy. [Count down to one] five...four...three...two...one... Action [two second count] Freeze! [Most of the students making forced smiles.][Silent count to ten] and ….relax. How hard was that?”

Bill: “That’s it?”

Mr. Hontz: “Easy, right? [Students agree, some discussion between students] Are we OK with this? Ed, you get it?”

Ed: “This is it? I can do this.”

Mr. Hontz: “Good let’s try a few more.”

I continued to give easy words for interpretation: sad, mad, angry, cold, and hot, etc. The students became comfortable with acting out the words. As they became comfortable, their actions became bolder. Students began to show their statues using different levels. Some began to crouch to show the word. Others began to spread their arms or stand on toes to add expression.

Mr. Hontz: “Great job. Are you ready to try some different words?” *I know some of these students are just happy not doing work. Is this worth it?*

Kari: “This is fun. We never did this in school.”

Mr. Hontz: “What is fun?”

Kari: “I don’t know… you like get up and move and make shapes and its fun.”

April: “It’s better than taking notes!” [General agreement from the students.]

Mr. Hontz: “Don’t worry; we will get back to the notes. [Grumbling from the students.] Before we go on, I want you to try a focusing skill.”

I told the students to close their eyes, stand with their feet shoulder width apart, roll their neck slowly a few times, then shake their arms a few second and stand still silently, take a deep breath in through the nose and out through the mouth and then breath normally and wait for the new word. We practice this several times. At first, it was difficult for the students to do this drill. We would start and then someone would giggle and we had to start again. Eventually the students grew accustom to the procedure.

Mr. Hontz: “Ready, [The students go through the focus activity.] the word is hopeful. [Perplexed looks cross several students’ faces. The students do not react as quickly to this word.] Five ...four…*I sense a discomfort in the room* ...three [Students are struggling to shape the word making tentative movements then returning to the ready position.]… two… one… Action. [two count] Freeze! [Several students do not make any attempt at this word] and ….relax. How was that?”

[The students are talking] “How can you make a hopeful?” “What did you do?” *I think this may work!*

Jill: “I can’t think how hopeful would look.”

Mr. Hontz: “If you saw a picture of a person, how would they look if they were hopeful?”

Kari: “Kinda happy, but not …Oh, Look I got a new cell phone… happy.”

Mr. Hontz: “If a person is hopeful, are they happy or sad?”

Jill: “Both, they might be sad now but they think they might be happy soon.”

The class discussed the concept of hopeful and hopes for a few minutes. Not all students took part in the discussion but many did pay attention. Ed among others did not “get it”. Most of Ed’s statues look the same regardless of the word. Students also expressed how hopeful was more difficult to express as a statue. I believe the students were thinking deeper about this word, how they understood the word, and its place in their world. These students knew the word hopeful and used it many times without great thought. When they had to demonstrate its meaning without words, they were forced to reexamine what was their definition of hopeful.

The final word for this activity was yellow. The students became frustrated and somewhat angry with me for choosing this word. “How can you show a color!” “I can’t be yellow.” “Are you serious?” I assured them I was serious, and I wanted them to try to show yellow. It was a struggle, but most ended up posing with their arms extended, faces tilted toward the ceiling smiling. My class looked like rows of happy plants facing the sun. Apparently, for this group, yellow is a happy, growing color.

I continued to use this activity with my class. We progressed from easily modeled words like happy and sad to words with less clear-cut definitions, i.e.

war, liberty, freedom and injustice. It was not always a smooth journey. Several times I had to suspend the activity because some students became silly and off task. When this occurred, the other students chastised the offending students. An interesting observation was when the students used the activity to mark time in the class. On several occasions, students referenced the activity. “You know when it was. Remember when we did war as the word, and Bill stood there with his hands on his ears because he said it would be loud.” Most of my students seemed connected to the activity.

Fifteen Seconds of Fame

I used another drama/role-play activity called fifteen seconds of fame. The inspiration for this activity came from a discussion on building classroom atmosphere during a drama in education class conducted by Professor E.A. Finlay. The title came from a play on Andy Warhol’s statement from 1968 "In the future, everyone will be world-famous for 15 minutes."

I included this play as a vehicle for my students to begin to act independently of what they see before them. (Vygotsky, 1978) The process of critical thinking requires that students develop insight, or, as Ornstein et al. (2007) writes, see things in streams of inputs that most would not see. The fifteen seconds of fame activity forces students to see something that in reality is not there. The activity also provided the safety needed for my students to take chances. It is their story, they created it and they own it. His or her story has no

critique or grade. Students can make up what they feel is needed to tell their story. As students listen to the story, they create their own story about the object. The questions at the conclusion allow the audience to get answers to questions they developed. The activity unleashes the imagination of the storyteller and the audience, priming the class, opening the interactive process for thinking.

For their fifteen seconds of fame, students close their eyes and choose an object from a box I kept in my room. I stocked the box with items I thought the students had little or no familiarity with, including a telegraph key, a gauge for setting handles and knobs on cabinets, a small flag from the former Soviet Union, a piece of string with a large brass nut attached, and other such items. I selected three students randomly from my class list at the start of each class. These students selected an object for the box and had to extemporaneously create and tell the class a story about the object. The stories had to be within the boundaries of school policy and not be about anyone in our school. Other than those rules, the stories had no limits. I timed the students. At the end of the fifteen seconds, I called out “Stop!” and the student had to stop the story even if they were in mid-word. The class then had the opportunity to ask the student one question about the story. The story-telling student selected the person to ask the question about the story.

The Homework Ring

Bill had selected a metal c-clamp used to hang long handled tools on a wall. The clamp, made of bright aluminum, had a hole drilled through the back so it could be attached to the wall by a screw.

Bill: “Y’all see this. [Holds up the object to the class] This is my magic ring. Made out of platinum. Nice, huh? See that little hole there. [Shows class the hole] That’s where the ruby was. I gave that to my girl, yeah she liked it. [Class laughs] Now this ring is special, real special. See, when I put it on an rub it POOF! All my homework is done j…”

Mr. Hontz: “STOP! [Student interrupted mid word. Story ends. The class is buzzing with talk. In three years of middle school, Bill has rarely done homework. Most of the students have their hand up to be picked for the question.] Wow, look at all the questions. Bill, who will it be?”

Bill: [looking over the students] “Kari”

Kari: “If you have this great ring, how come you don’t have your homework?”

Bill: “Sometime the ring don’t work.”

Mr. Hontz: Apparently so. Maybe you can try doing homework without magic until the ring gets fixed. All right lets’ get started.” [Class begins]

As Cazden (2001) pointed out, teachers need a repertoire of lesson to meet educational goals. This activity is only one of many that should be available to the teachers. In my class I had great success using this activity. However, I was so enamored with the concept that I almost destroyed the groundwork I had done

with my class. In an effort to improve vocabulary retention and use, I decided to modify the activity. Rather than use objects for the story, I substituted vocabulary words. Students would pick a word and tell a story. The students hated it. They dreaded being chosen and created awful monologs consisting of halfhearted efforts to recite the definitions. The joy of the activity was gone. As one student bluntly told me, “This was fun, now it sucks. We already take a vocabulary quiz every week. What’s the point? ”

I had to admit she was correct. I discontinued the use of vocabulary words and brought back “The Box” as the students called the activity. I turned play into work. Rather than open the interaction between students, I closed it. Instead of students’ engaging in imagination and thinking, they thoughtlessly parroted meaningless words.

We continued to employ both drama activities in the class. Most of the class participated in the activities. While some students always participated, a group of students appeared to take part in the activity at random. These students did not withdraw from the activity, but seemed to hang at the edge, observing. On any particular day, anyone of this group became fully engaged in the activity, creating a masterful story in fifteen seconds or physically interpreting a word in a unique and creative manner. On other days, the same student who did a wonderful job would seem to retreat to the periphery of the activity, and a different member of this group stepped forward and participated. It would be interesting to try to

determine the causes of this behavior. I was concerned about this observation. I had planned a larger group activity using role-play entitled Kwiki Burger as an additional drama activity. This activity would require the students to sustain the role over several class periods on different days.

Kwiki Burger

I found the Kwiki Burger activity in a supplement to our textbook "Civics - Government and Economics in Action" published by Pearson/Prentice Hall (2005). The activity revolves around a town planning committee requested to allow a fast food restaurant to be built on the edge of a residential neighborhood near the local high school. This would be the first of this type of restaurant built in the town. During the simulation, the students assumed the roles of adults in the community. For the simulation, the students constructed some of the roles others are predetermined. I approved all student-generated roles. After role assignment, several students ran for election to the planning board. Three members of the board are for the change and three are against allowing Kwiki Burger to construct a fast food restaurant. The board voted on the application after a public hearing. The students attempted to sway the board to adopt their position.

Several students chose to run for office. Each student gave a short speech asking the voters to elect them based on their position on the restaurant. One student, Bill, changed the dynamics of the room his election attempt.

Bill: “I should be elected because I am the best! [Laughter from the class.] No really, I am good at this. I can be like the president or something. [More laughter. Bill is currently failing the class and has the reputation, well deserved, as class clown.] No, listen up. I can do this. You see it.” [Bill’s tone is changing. The student started this out almost as joke, but as he continues, he is becoming anxious and agitated.]

Mr. Hontz: “Bill, why don’t you tell the class a reason why they should vote for you.” *I did this to help this student. I can see he is losing the battle for respect to change the view of his peers, who see him as a funny but dumb kid.*

Bill: “Because I’m the best! No, no really. [Bill laughs but most students do not] I can do this. I can like listen to you and then vote. You know.” *I feel the student is losing the class. Many thought it was funny once but now the feeling he is wasting time and it is time to move on to the next person.*

Mr. Hontz: “Is that it?”

Bill: “Yeah I’m good” [Bill sits down.] *The student seems disappointed in not getting a better response. I wonder if he wanted more laughs or respect. My feelings are that Bill is looking for a way out of the role of class clown. The student wants to be the center of attention and is overly social in class to the point of rudeness.*

Bill lost the election to the planning board. He seemed ready to try the role of an adult. His classmates, however were unwilling to allow him this

opportunity. As the drama unfolded, it appeared that the majority of students were willing to try a new persona but did not trust Bill to play within the rules. The class seems to be acting as Vygotsky (1978) predicted. In the activity, the students are allowed to "do as they please [act in role] because it is what they want to do, gaining pleasure." (p.99) However, they also "subordinate themselves to rules [acting like an adult] and renunciation of impulsive actions to pursue the maximum pleasure for the play." (p. 99) The students seemed fearful of Bill ruining their fun.

The continuation of this activity bought to my attention the power of using a role to experiment with a new personality: in particular a transformation from an invisible member of the class to a powerful role as an adult. Cal is a slightly built student, small in physical stature and very quiet in the classroom. He is the invisible kid in the back of the room, i.e. no discipline problems, does most of his work, nice kid.

I Am the Man!

One interesting note was Cal's request to be the company representative. The student who had the role offered to let Cal take over, and I did not object. This is a difficult role. The majority of students was opposed to the construction of the Kwiki Burger and had badgered the prior company representative mercilessly. Cal had to become the "expert" on the products and operations of the Kwiki Burger Corporation. In this simulation, the company representative is the hired gun

brought into the situation to stop the local resistance toward the company's expansion.

Cal continues to surprise me in his efforts during the simulation. I have not seen this aspect of his personality before. He is using comments from the class to build arguments and make his points.

Cal: "We sell good food at a low price. People in your town now have to travel to the next town to get this food. If we build here, think about how much gas you can save."

Jo: "Your food is not good for you."

Cal: "We sell good food. People don't have to eat our food all the time."

Jo: "Your food will make our kids fat."

Cal: "We sell salads and other stuff that is not fat. You could eat that."

Jo: "But the kids will eat the fat food, not the good food."

Cal: "It's our job to sell the food. You can pick what to eat. We don't tell you what to eat. We offer good food at a good price!"[Proponents of the restaurant applaud. Cal is smiling!] *I was surprised by this exchange. Neither student showed this type of thinking in the regular classroom setting. It could be a good idea to modify my classroom to include more of this type of activity.*

Sue: "It would be nice if I came home from work late and could just go to Kwiki Burger and get dinner."

Jo: “But the food is not good for you.”[Jo seems to have become the food police. She keeps pointing out how unhealthy the food is.]

Sue: “Can’t I pick where to eat?” [Jo has no response to this question. She seems to be taken aback by Sue’s response.]

Cal: “Kwiki Burger is about choice. It’s also about jobs. *Who is this kid?* Your kids can work at Kwiki Burger and get money.” [Cal looks around the room unflinchingly]

Jill: “Why should you be allowed to build in our town? We have a rule that says no fast food restaurants. Why do you think you can break the rule?” [Several students applaud and cheer for Jill. The president bangs the gavel and calls for quiet.]

Cal: “We are good for a town. More people will get jobs, and we will give money to the high school to buy new computers. Some people in your town want the kind of food we sell, and Mrs. Smith [One role was as the owner of the property for sale Mrs. Smith] will get a lot of money for her land.” [Students supporting the Kwiki burger cheer.]

Donna: “How can you keep me from making money? It’s my land, and I want to sell it!”

Cal: “And Kwiki Burger wants’ to buy it!” [Supporters of Kwiki Burger cheer]

In his role, Cal had transformed himself. He had become “the man.” He was no longer the quiet kid in the back. He peers looked at him in a different light

during the simulation. He was not Cal; he was the smart Kwiki Burger Guy. Cal seemed to view himself differently during the simulation. He engaged other students in conversation, looking at them rather than towards the ground. He even seemed to stand taller.

At the end of the simulation, Cal and Kwiki Burger were defeated in their quest for the permit. The majority of the class was angry with the planning board. There were charges of corruption and ignoring the will of the people. Several in the class wanted to impeach the board and elect new members. When I told them the simulation was over, they demanded we continue to “settle this problem.”

Drama has a place in the classroom. Students become engaged in learning. The discourse in the class moves from teacher centered to student centered. Critical thinking skills are attempted but, the students have a safe place for practice. If his or her attempt to show yellow as a shape fails no one cares, a fun activity, it did not count. If they succeed, they have grown. Should their story be less than perfect, so what? It was theirs, and they are beginning to see the unseen in objects, opening their thought process to accept new ideas. If they overact and use a different tone of voice or express new ideas, it is not them; it is their character speaking. When the play is over, they revert. However, the experience stays with the student adding to the growth of the individual. “It is the essence of play that a new relation is created between the field of meaning and the visual

fields – that is, between situations in thought and real situations."(Vygotsky, 1978, p.104)

Methods of Analysis

Initial analysis of my data, including my field log, student work and surveys occurred while conducting the research. Hendricks (2006) defines this as interim analysis: analyzing the data throughout the study to aid in enhancing data collection methods to reflect potential problems or questions. She notes that intuitively one would begin analysis at the conclusion of the study. However, this action reduces the ability to gather the data necessary to make the study credible (Hendricks, 2006).

As the study proceeded, I returned to my field log to add new observations and reflections. These are the formal records of the hand written field notes taken in class. In transcribing these comments and observations, I was cautious to differentiate between field observations and reflective comments made at the time as noted in the log, identifying each in the formal record by using different typeface. Bogdan and Biklen (1982) caution researchers to maintain this separation throughout the study.

While recording new data in my log, I revisited prior data to look for patterns or themes in the observations. Ely, et al (1997) reminds qualitative researchers of the necessity to revisit the data to gain insight to new observations

or unexpected events during the study. During these reviews, I wrote any new observations in a bright orange colored pen and noted the date recorded.

During the study I developed a system of codes to aid in the in the identification of patterns. Coding provides the researcher a system of identifying meaning within the data (Ely, et al., 1997). If a section of text in the field log noted critical thinking while speaking, I entered the code CT above the text. I recorded all codes in green pen. I organized my codes alphabetically and printed the list to keep with the field log to aid in accuracy of the coding. As new observations occurred that did not fit my original codes, I added additional codes. I also created a spreadsheet, cross-referencing the codes and page the numbers in the log where the codes appeared. During the interim analysis and final analysis of my data, I updated this coding spreadsheet. Coding began after I had made several (participant) observations.

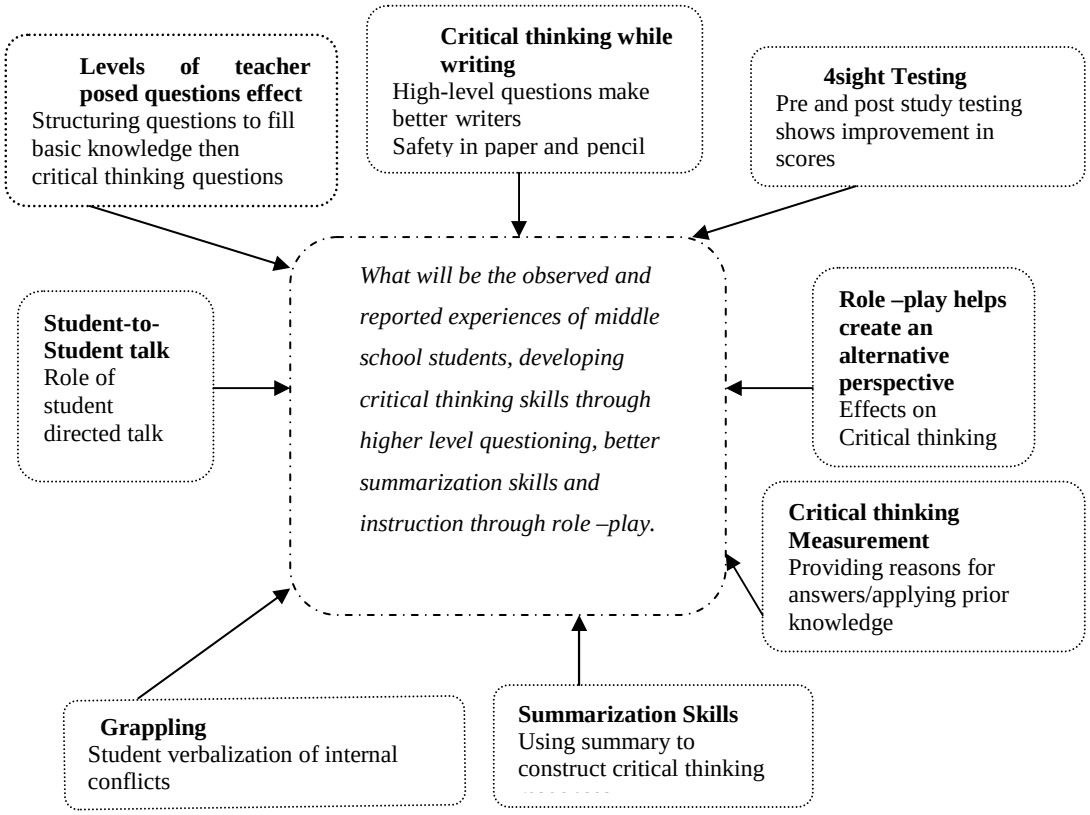
I began to sort the codes into categories identified as bins by Ely, et al. (2007). These bins are a tagging of codes that have a relationship. Once placed in the bins, I began to develop, as Ely, et al. (2007) suggest, theme statements from the related codes. These themes are meanings that run through all or most of the data. Using these bins and the subsequent theme statements, I created a graphic representation of the analysis of the coding. (see figure 1 on page 87)

For the analysis of my student reading surveys, I tallied the raw data to produce charts of the compiled results. (Appendixes I through S) I then compared the student self reported data to my classroom observation noting the differences.

During the review of the field log, I modified my instruction methods by eliminating activities that were not aiding in the development of student critical thinking or were frustrating students. I also noted where a new study could be helpful in my growth as an instructor.

In analyzing critical thinking measurement, I looked at the students' responses to the prompt. I was looking for demonstration of knowledge of the subject matter and the reasoning behind the answer. I compared student responses from the start of the study to responses written near the end of the study for growth in reasoning.

Figure 1
Bins and Theme Statements



Students within chosen roles seem able to overcome fear of failure and attempt to use critical thinking skills while speaking.

Students seem to be able to demonstrate high levels of critical thinking when responding to higher-level question prompts.

Ability to apply basic summarization skills seems to aid students in demonstrating critical thinking in writing.

Students need to practice summarization skills to make connections to critical thinking.

Student generated summaries seem to help the students to demonstrate critical thinking skills in written responses.

Instructor's posed questions seem to help guide students to respond at higher levels.

Students verbalizing while grappling seem to allow students to pose much better follow up questions.

Students at this age fluctuate in demonstrating critical thinking.

Drama in the classroom seems to give students a different way to connect concepts to new situations.

Critical thinking seems to improve as students become familiar with providing reasoning for responses.

Standardized test scores showed improvement at conclusion of the study

Findings

The overarching theme of my study was to determine if eighth grade students could develop critical thinking skills using summarization, higher level questioning, and drama in the classroom. Additionally, I was looking for improvement in standardized test scores because of the implementation of these instructional strategies.

Drama in the classroom seems to give students a different way to connect concepts to new situations. / Students within chosen roles seem able to overcome fear of failure and attempt to use critical thinking skills while speaking.

Neelands and Good (2005) argue that the intentions of drama used in the classroom include the student gaining insights into self through risk-taking and experimentation and developing problem-solving skills. In the Kwiki Burger activity, where students took on the roles of civic minded adults arguing the pros and cons of a zoning change, I observed students who had previously seemed disconnected and withdrawn from the traditional classroom blossom and become critical thinkers and leaders of the class discussion. Students who did not show critical thinking in the regular classroom setting were now demonstrating these skills, and this surprised me. Students using role-play demonstrated critical thinking skills by explaining the reasoning behind their responses. Students also looked for and exploited weaknesses in arguments made by others. Ornstein et al.

(2003) maintain that ordinary thinking offers opinions without reasons while critical thinking provides good reasoning, i.e. the use of criteria, self correction, and content sensitive, behind the thinking. They also argue that critical thinking is introspective, looking to discover weaknesses within the thinking, maintaining the possibility that the thinking is erroneous. Clearly, these students are demonstrating critical thinking.

While in role, students feel protected from peer pressure. An excerpt from my field logs shows this taking place. In his role, Cal had transformed himself. He had become “the man.” He was no longer the quiet kid in the back. His peers looked at him in a different light during the simulation. He was not Cal; he was the smart Kwiki Burger guy. Cal seemed to view himself differently during the simulation as well. He engaged other students in conversation, looking at them rather than towards the ground. He even seemed to stand taller. In an eighth grade class, students are well aware of the implications of embarrassment. When students are in role, it provides them with an escape from this embarrassment. It was not the student acting it was his/her character who was doing the talking.

“The students in drama must draw on their abilities and knowledge of the actual world. They must start with their experiences, use them to confront new texts and experiences, and use this to reflect and create a response and new understanding” (Wilhelm, 1998 p. 9). In my classroom, I was able to observe students creating stories based on objects with which they were unfamiliar.

Students were required to use their experiences to assimilate these objects into their schemata. “Learning is more than the acquisition of the ability to think; it is the acquisition of many specialized abilities for thinking about a variety of things” (Vygotsky, 1978 p. 83). My students had the opportunity to practice this thinking skill in a safe environment in a class warm-up activity. As the study continued, I was able to observe students using this skill when they begin their reasoning for answers with comments such as “I am not sure, but I think this is like when talked about common good. We all pay taxes but some people get to use the stuff they buy more.” I was able to witness students facing unfamiliar concepts and use their skills to connect the new concept to prior knowledge.

Instructor-posed higher level questioning techniques seems to help students develop critical thinking skills. / Students seem to be able to demonstrate critical thinking when responding to higher-level questions.

Students who are asked simple questions give simple answers. Students who are asked higher-level questions respond with higher-level answers. The teacher sets the level of the questions. “Teachers who redirect questions for clarification or verification, furthermore, challenge young adolescent students to be less impulsive and more accountable for their own thinking” (Beamon, 1997, p. 51). I observed this phenomenon in my classroom. At the beginning of my study, I asked low-level questions requiring students to recall facts from the text. Students could recall the facts, but when pressed for their reasoning, they referred

to the book as their source of information. This was not surprising. Ketterlin-Geller et al. (2003) found in a cumulative review of three textbooks on world history, United States geography and Earth Science that the majority of questions were factual, ranging from eighty-four percent to as much as ninety-five percent. Students begin to associate recall of an assortment of facts with thinking.

As the study progressed, I added probing questions, questions asking for clarification or reasoning for their response. The students became familiar with these types of questions, and they began to show their reasoning for their answer. In a discussion, one of my students suggested a way to end the war in Iraq by dropping two nuclear bombs on the country. When I pressed for an explanation of how this would end the war, the student responded, “When we won the Second World War we dropped two atomic bombs on Japan, and they quit. Why can’t we do the same thing?” The student is using criteria, the convention of traditional warfare, and reasoning in the response. This is critical thinking. The student then generated a probing question:“How is the war in Iraq different than the one with Japan? They bombed us like Japan did at Pearl Harbor.” According to Bourner, (2003) when students can pose such probing questions, critical thinking is present.

After the students had read an article in which the author had interviewed a suicide bomber in Iraq, I asked if the person doing the interview should have assassinated the bomber. Many students quickly agreed giving reasons such as it would save lives and protect innocent people. Here again the students were

showing critical thinking skills. One student, however, was not as quick to agree with the others: “We don’t do that. This guy just said he was going to do it. You can’t shoot someone for that. We have laws we follow.” This student recognized flaws in the arguments of his peers and was attempting to show the others their error. These observations seem to support the work of Myhill, Jones, and Hooper (2006) who point out the value of teacher-generated questions for promoting reflection, analysis and inquiry from the students. Myhill et al., (2006) also argue that student generated questions can create the same effect.

I feel that one of my observations best shows how probing questions can help build students’ critical thinking. After the class discussion of the article on suicide bombers, one of my students commented, “I was one hundred percent against the war, but now what do I do? I’m not sure what to think. Why did we invade Iraq? Now we have people like this trying to kill us. We can’t just go home. Can we?” These comments and questions are deep and powerful. This would seem to indicate that if given the opportunity, eighth grade students are capable of developing critical thinking through teacher and student generated probing questions. One of the most exciting observations from my study was the almost spontaneous growth in critical thinking demonstrated by my students. While I did give instruction in what critical thinking looked like, I did not-nor do I believe I could-demand students to think critically. Critical thinking is an internal event. I could not deposit critical thinking into the students. I could only let them

try the experience with my instruction as a reference point not a mandate. “The teacher's thinking is authenticated only by the authenticity of the students’ thinking. The teacher cannot think for her students, nor can she impose her thoughts on them” (Freire, 1921, p. 77).

I provided a forum for the practice of critical thinking, not a demand to perform the skill. Within the span of a forty-minute class, I observed students listening, reflecting, and responding to other students’ comments. The structuring of the classroom allowed the students the opportunity for critical thinking. This supports the findings of Song et al. (2003) that middle school students valued interaction between peers as a method of becoming critical thinkers. I also reflected on this lesson, learning from the students. They are capable of being critical thinkers. How long have they been denied the opportunity to grow? ***Students need to practice summarization skills to make connections to critical thinking. / Student generated summaries seem to help the students to demonstrate critical thinking skills in written responses. / Critical thinking seems to improve as students become familiar with providing reasoning for responses.***

In the survey I conducted at the beginning of my study, one of the questions was, “Do you restate in your own words the main idea of a section that you are reading?” Eighty percent of the responses fell into the always, almost always and sometimes categories. This would seem to point toward the students

being able to produce accurate summaries of reading assignments. In my field research, quite the opposite emerged. Students could not summarize in their own words. In fact, during the introduction to summarization, students could not clearly identify what summarization was. Many students felt summarization was copying sections of the text verbatim. The students could find main ideas and repeat them but did not internalize ideas. It was difficult for the students to form these concepts into their own words. The student responses and the field observations indicated the students had misconceptions on the meaning of summarization.

I began to have the students use a template to help them construct a summary. This template reminded students to list the details that were important, review, concentrate the list, and finally rewrite the information in their own words. As the students practiced with writing summaries with the template, they became better at summarization. Eventually most students did begin to produce summaries in their own words without using the template. Other students referred back to the template when the text became too complex for them.

McGee, Kirby, and Croft (2001) connected summarization with the development of content knowledge and problem solving. Their work found that as students became better at summarization their ability to recall information from the work increased along with the ability to apply this information to new situations.

As my students became better in summarization skills, their responses to written prompts began to show increased critical thinking. The students began to provide reasoning for their responses and include information from the text to support this reasoning. These writing prompts were modeled after questions used in the study by Ketterlin-Geller et al. (2003) looking at how to measure critical thinking (CTM) in addition to measuring recall of curriculum content.

The implementation of these instruction strategies seems to improve scores on standardized tests.

This class participated in three standardized tests designed to predict scores on the Pennsylvania State System of Assessment. The tests were conducted pre- during and post study.

The pre-study results in the “reading critically in all areas category” provided a base line score for this class of 76.44%. In the post-study test of the same category produced a score of 85.10%, an increase of 11.32%. (see table 1) School-wide the scores decreased in this category by .02%.(see table 2) It appears that teaching critical thinking skills to eighth students may increase standardized test scores.

While these numbers are encouraging, there are confounding factors that must be included in the findings. These students are part of a team teaching system. They are instructed in language arts and reading by two different teachers. These teachers are teaching test taking skills and using model questions from the

assessment. This may have influenced the scores on the standardized test. In addition, the intervention was relatively brief-one semester. It seems reasonable to assume that over a longer period of time that the growth reflected in the table would continue. To promote critical thinking and give all students tools to be successful in taking standardized tests, I will constantly need to modify my teaching style to match the students.

Summary

The effectiveness of the strategies used to improve critical thinking by my students varied. Teaching eighth grade students to analyze and form questions using Bloom's Taxonomy was not effective. While students could identify and produce questions at the knowledge and comprehension level, they struggled and became frustrated when attempting to produce questions at the application, analysis, synthesis, and evaluation levels. There appear to be several factors contributing to this issue. My students had difficulties drawing distinctions between descriptors used to identify levels of questions. Additionally, students labored with determining at which level a question belonged. It appeared to the students that a question could belong in several different levels, and they did not want to make a "wrong" choice. My students may not have been at the cognitive level necessary to grasp the complexity of the taxonomy and were not ready for this strategy. Another factor may have been my students' lack of exposure to questions higher on the taxonomy. For most of their academic lives, they

experienced questions from the knowledge and comprehension level. They were unfamiliar with the type of question.

Teaching summarization proved more effective. Although my students believed that they were adept at summarization, initially they were not. They confused summarization with telling a story and did not identify key information in the work. As my students began to identify and document the key points and concepts in expository text, their recall of content improved. With the improvement of the content recall, my student began to show critical thinking by defending their responses with reasons for their answers. As we continued, they applied prior knowledge to unfamiliar theoretical situations in an effort to construct meaning to the experience. This summarization instruction meshed with the critical thinking measurement activities. These activities asked students to recall several concepts and apply them to a prompt. I assessed my students on the recall of the concepts and the rational for the response. Students were encouraged to defend their responses even if they thought they did not accurately recall the concept. My students, including those who did not perform well on traditional tests, seemed to enjoy the opportunity to justify their answers. Many students demonstrated critical thinking in their responses as the activity continued.

The most effective strategy, I feel, was drama. With the drama, students began to take risks in their thinking. They were asked to see past the obvious and look at what possibilities existed. Students began to grow accustomed to looking

at things thru a different lens, examining them in another light. They shifted between concrete thinking and abstract thinking, almost like a bather testing the water with a toe. Several students plunged in while others immersed themselves slowly. A few felt the water and withdrew at first, but even these students returned to test the waters again. Drama seemed to open a door through which the students to pass, allowing them to try out his new thinking then return safely. It appears drama can be a key to developing critical thinking. Drama allows the students to look at the world in a different way. This carried over into their responses in the critical thinking measurement activities where they began to write with reason.

Table 1. My study class 4sight testing results (N = 26)

	Comprehension & Reading Skills	Interp. & Anal. Of Fiction/Nonfiction	Learning to read Independently	Reading critically in all Content Areas	Reading, Analyzing and Interpreting Lit.	Open-ended Responses
baseline	76.63%	84.07%	78.63%	76.44%	85.38%	62.82%
first test	76.63%	90.93%	75.64%	82.21%	93.08%	84.62%
second test	89.65%	85.16%	90.6%	85.1%	86.15%	82.05%

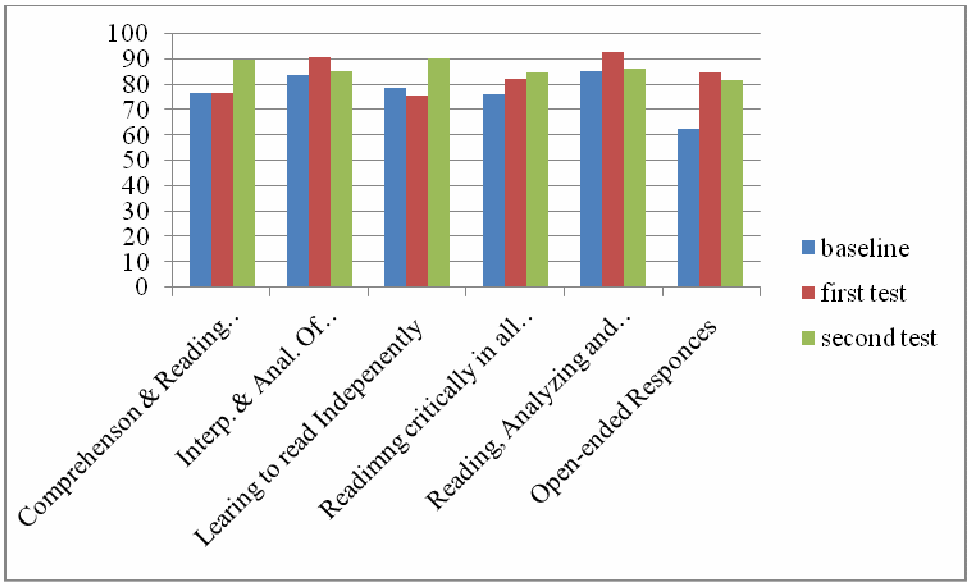


Figure 1 Study Class 4sight Testing Results

Table 2. School 4sight testing results (N=172)

	Comprehension & Reading Skills	Interp. & Anal. Of Fiction/Nonfiction	Learning to read Independently	Reading critically in all Content areas	Reading, Analyzing and Interpreting Lit.	Open-ended Responses
baseline	69.74%	75.65%	71.49%	70.41%	75.9%	46.18%
first test	70.82%	80.13%	70.33%	74.34%	81.47%	80.59%
second test	78.49%	74.88%	77.26%	75.58%	76.86%	65.89%

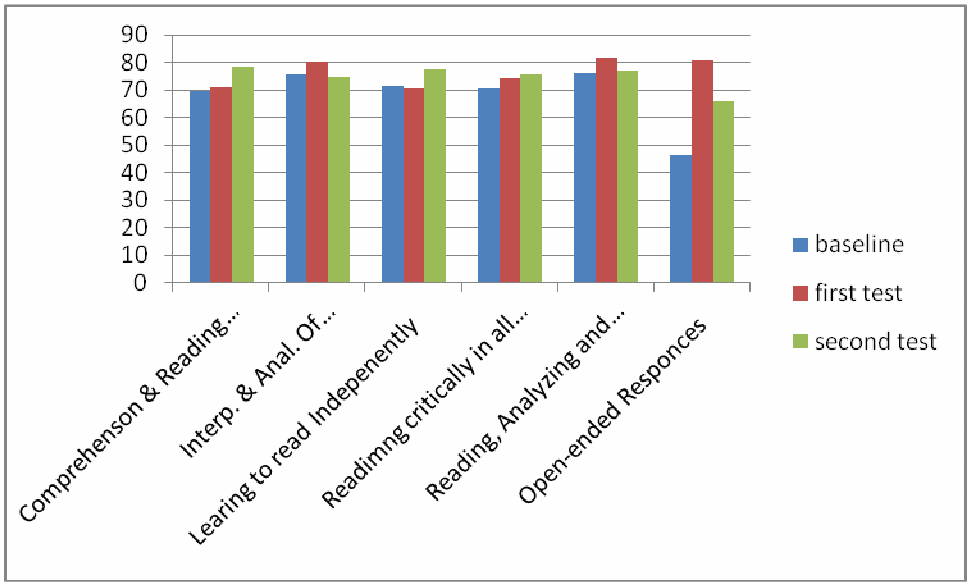


Figure 2 School 4sight Testing Results

Offerings and Suggestions

In my research stance, I questioned whether eighth grade students would be able to develop critical thinking skills and could these skills help improve test scores. For my classroom, I believe the answer was yes. Given the opportunity, students began to show critical thinking skills. Additionally, there is some evidence that scores may improve by developing critical thinking along with content knowledge. My research seems to indicate that this outcome should not be a surprise. How best to achieve these goals will be the focus of my continuing reflections on my teaching methodology.

Because higher-level questions produce high-level answers and, given the observations in my class, I will continue to ask high-level questions and expect high-level responses showing critical thinking. Eighth grade students can demonstrate critical thinking if they are shown how. If students have a solid grasp of the overreaching themes of a lesson, they can grow academically through questioning. Tell them what it is you want them to know, and then push for growth. “Teachers who redirect questions for clarification or verification, furthermore, challenge young adolescent students to be less impulsive and more accountable for their own thinking” (Beamon, 1997, p. 51). Help them to think, and then let them think.

When I introduced summarization skills, students complained, “We did this last year.” It may have been true. They did do summarization, but they did not understand or do this well. It was well worth my time to discover their lack of understanding in this area. My students did not mislead me; they believed they could do the work. Their teacher the previous year did teach this skill, and they did seem to understand. However, that was last year and students tend to lose skills when they do not practice them. Movement towards higher-level subject matter requires the reintroduction and refinement of basic skills to support the learning (Wood, Winne and Carney 1995). With review, my students began to produce good summarizations, and these summarizations aided in developing their critical thinking. With the knowledge base gained from the summarizations, they could use the critical thinking skills they were developing. In this regard, a review of basic reading skills in order to check for understanding is not without its benefits.

One of the personal highlights of my study was the addition of drama as instruction to my classroom methodologies. My initial reaction to the suggestion to add this type of instruction was probably typical of many teachers. I could not visualize how a group of rambunctious eighth grade students would buy into drama. Wilhelm (1998) highlighted his lack of experience with drama: “Through my own undergraduate training and two masters degrees in teaching English and reading I never read about nor was helped to develop any expertise in using

drama-as opposed to theatre - as an educational tool to support reading and learning"(p 5.) As a science and social studies teacher, I had even less opportunity to experience the power of drama as instruction.

I was successful in adding drama in my classroom through the combination of attending a class on drama in the classroom and implementing activates from "Structuring Drama Work" by Jonothan Neelands and Tony Goode. These activities lead students to become more open to seeing what was not actually present, a form of play in the light of Vygotsky, (1978) who notes "It is the essence of play that a new relation is created between the field of meaning and the visual fields – that is, between situations in thought and real situations" (p.104). The implication of the inclusion of drama was an increase in observable critical thinking by my students. Students seemed to be using the experience gained in the drama, role-play, and imagination, in their written and verbal responses to complex high-level questions.

The success of these drama activities rests on the work I did laying the foundations of expected classroom behavior as well as the work the students did in becoming willing partners in the activity. What worked in my classroom cannot be thought of as a pattern to be followed in all classrooms. I was successful with this. It is quite possible that a different group of students with a different outlook would not have been willing or able to participate in the class as I had envisioned. Teachers will need to carefully consider their classroom class culture and

establish a level of trust both students to student and teacher to student. I offer my positive experience with drama as a reason to investigate the possibility of trying this powerful instructional methodology.

REFERENCES

Aldridge, M. (1989). Student questioning: A case for freshmen academic empowerment. *Research & Teaching in Developmental Education, 5*(2), 17-24.

Barnes, P. (2005). Think for yourself. [Electronic version]*Teaching Prek-8, 36*(2), 31.

Beamon, G. W. (1997). Sparking the mind of students, ages 10-14. Thousand Oaks, CA. Corwin Press. Inc.

Bogdan, R. C., & Biklen, S. K. (1998). *Qualitative research in education: An introduction to theory and methods* (3rd ed.). Boston: Ally and Bacon.

Bouchard, N., (2002). A narrative approach to moral experience using dramatic play and writing. *Journal of Moral Education, 31*(4), 407-422

Bourner, T. (2003). Assessing reflective learning. *Education & Training, 45*(5), 267-272

Cazden, C. B., (2001) *Classroom discourse: The language of teaching and learning* (2nd ed.) Portsmouth, NH: Heinemann A division of Reed Elsevier Inc.

Chin, C. (2001, April) Student-Generated Questions: What they Tell Us about Students' Thinking. Presented at the Annual Meeting of the American Educational Research Association Seattle, WA. April 10-14 (ERIC Document Reproduction Service No.454235)

Chin, C., Brown, D. E., & Bertram, B. C. (2002). Student-generated questions: A meaningful aspect of learning science. *International Journal of Science Education, 24*(5), 521-49.

Connelly. F .M., & Clandinin, D. J., (1998). *Teachers as curriculum planners: Narratives of experiences.* New York: teachers College Press.

Deal, D., & Sterling, D. (1997). Kids ask the best questions. *Educational Leadership, 54*(6), 61-63.

Delpit, L. (2002). *The skin that we speak: Thoughts on language and culture in the classroom.* New York: The New Press.

Dewey, J. (1938). *Experience and education.* New York: Touchstone.

Ely, M., Anzul, M., Freidman, T., Garner, D., & McCormack-Steinmetz, A., (1991). Doing qualitative research: Circles within circles London, UK Falmer Press

Flick, L. B. (1998, April). Integrating elements of inquiry into the flow of middle level teaching. Presented at the Annual Meeting of the National Association for Research in Science Teaching. San Diego, CA. April 19-22, 1998 (ERIC Document Reproduction Service No.446296)

Freire, P. (2007) Pedagogy of the oppressed (30th anniversary ed.) (M. B. Ramos, Trans.). New York: Continuum. (Original work published 1970)

Garber, S. H. (2002, April). *"Hearing their Voices": Perceptions of high-school students who evidence resistance to schooling*. Presented at the Annual Meeting of the American Educational Research Association New Orleans, LA. April 1-5, 2002 (ERIC Document Reproduction Service No.465939)

Harmon, J., Hedrick, W., & Wood, K. (2005). Vocabulary self-selection; A study of middle-school students' word selections from expository texts. *Reading Psychology*, *26*(3), 313-333.

Hendricks, C. (2006). *Improving school through action research: A comprehensive guide for educators.* USA: Pearson A and B

Holly, M. L., Arhar, J. M., & Kasten, W. C. (2005). *Action research for teachers: Traveling the yellow brick road* (2nd ed.) Upper Saddle River, NJ: Pearson Merrill Prentice Hall.

Ketterlin-Geller, L. R., McCoy, J. D., Twyman, T., & Tindal, G. (2003) How do critical thinking measures fit within standards-based reform? *Assessment for Effective intervention*, *28*(3&4), 37-46.

Lerch, C., Bilics, A., & Colley, B. (2006, April). Using reflection to develop higher order processes. Presented at the Annual Meeting of the American Education Research Association San Francisco, CA, April, 2006

MacKenzie, A. H. (2001). The role of teacher stance when infusing inquiry questioning into middle school science classrooms. *School Science and Mathematics, 101*(3), 143-153.

McGee, S., Kirby, J., & Croft, S. K. (2000, April). Activity summaries as a classroom assessment tool. Presented at the annual Meeting of the American Education Research Association. New Orleans, LA. April 1-5 2002 (ERIC Document Reproduction Service No.471088)

Morris, R. V., (2001). Drama and authentic assessment in a social studies classroom. *Social Studies, 92*(1), 41-44

Myhill, D., Jones, S., Hopper, R. (2006). Talking, listening, learning. New York, NY. Open University Press.

Neelands, J. &Goode, T. (2000) *Structuring drama work: A handbook of available forms in theater and drama*. Cambridge, NY Cambridge University Press

Ochoa-Becker, A. S., (1999). Decision making in middle school social studies: An imperative for youth and democracy. *The Clearing House 72*(6), 337-40.

Ornstein, A. C., Pajak, E. F., & Ornstein. S. B. (Eds.). (2003). Contemporary issues in education fourth edition. United States of America. Pearson A and B

Rinehart, S. D., Stahl, S. A., & Erickson, L. G. (1986). Some effects of summarization training on reading and studying. *Reading Research Quarterly, 21*(4), 422-438.

Smith, W., Sekar, S., & Brandon, K. (2002, November) The impact of surface and reflective teaching and learning on student academic success. Presented at the Annual Meeting of the Mid-South Educational Research Association Chattanooga, TN. November 6-8, 2002,(ERIC Document Reproduction Service No.471299)

Song, Hae-Deok., Grabowski B. L. Koszalka, & T. A. Harkness, W. L., (2003, April). Instructional design factors prompting reflective thinking in problem-based learning environments: Comparing middle school and college students' perceptions. Presented at the annual Meeting of the American Educational Research Association. Chicago, IL. April 21-25, 2003 (ERIC Document Reproduction Service No.475712)

Thorndike, E, L., (1917) *Reading as Reason* New York: Macmillan

Underwood, T. (1998). Teaching writing with reflective questions and reflective answers. [Electronic Version] *Clearing House, 72*(1), 18-24

Vacca, R. T. (2006). They can because they think they can. *Educational Leadership, 63*(5), 56-59.

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological process.* (M. Cole, V. John-Stiner, S. Scribner, & E. Souberman, Eds.). Cambridge, MA: Harvard University Press.

Wilhelm, J. D., (1998). Learning by being: Drama as total immersion. *Voices From the Middle, 6*(2), 3-10

Wood, E., Winne, P. H., & Carny, P. A. (1995). Evaluating the effects of training high school students to use summarization when training includes analogically similar information. [Electronic Version] *Journal of Reading Behavior, 27*(4), 605-626.

APPENDIXES

Appendix A: Principal Letter for approval of study

August 10, 2007

Dear Mr. Principal,

I am currently working toward a Master's degree in Curriculum and Instruction at Moravian College. This program is designed to allow me to remain current with the most effective teaching practices and provide our students with the best learning experiences. In order to earn my degree I am required to conduct a study of my teaching practices.

This year from 9 17/07 to 12/21/07 I plan to study the effects of teaching students how to form questions from expository text, summarization skills, and critical thinking. All of these skills are necessary for students to become independent thinkers. The study question also correlates with the anchors in the PSSA reading test currently taken by our students. In my research I have found that students perform better on the standardized testing when they are given instruction in summarization skills and forming their own question while using the textbook from the classroom. There are no perceived risks associated with this study.

In my study I will be collecting data from student writings, observed behaviors, student surveys, standardized test results, and grade point averages. I am asking permission to use data gathered about our students' involvement in this study. Participation in the study is entirely voluntary and will not affect our students' grades in any way. Students may withdraw from the study at any time without penalty. No changes in the amount or quality of class work will occur in this study. All student names, student information, school location and faculty names will be kept confidential by using composites and pseudonyms. All research materials will be secured in a protected location. During the study anonymous research data may be shared with my research associates and my professor.

If you have any questions about my research please contact me by note, phone (601-438-2992), or e-mail khontz@wilsonareasd.org. In addition my facility sponsor at Moravian has approved the study. My facility sponsor is Dr. Joseph Shosh, who can be contacted at Moravian College (610-861-1482) or by e-mail jshosh@moravian.edu. Thank you for your cooperation.

Sincerely,

Karl G. Hontz
8th Grade Teacher

Request to use data Approved _____

Denied _____

Signature _____ date _____

Appendix B: HSIRB

MORAVIAN COLLEGE

August 20, 2007

Karl G. Hontz
501 Keystone Ave.
Easton, PA 18042

Dear Karl G.Hontz:

The Moravian College Human Subjects Internal Review Board has accepted your proposal: "Incorporating summarization and questioning skills in an eighth grade class to increase understanding while reading expository text." Given the materials submitted, your proposal received an expedited review. A copy of your proposal will remain with the HSIRB Chair.

Please note that if you intend on venturing into other topics than the ones indicated in your proposal, you must inform the HSIRB about what those topics will be.

Should any other aspect of your research change or extend past one year of the date of this letter, you must file those changes or extensions with the HSIRB before implementation.

This letter has been sent to you through U.S. Mail and e-mail. Please do not hesitate to contact me by telephone (610-861-1415) or through e-mail (medwh02@moravian.edu) should you have any questions about the committee's requests.

Debra Wetcher-Hendricks
Chair, Human Subjects Internal Review Board
Moravian College
610-861-1415

Appendix C: Parent/Guardian permission for student participation in study

Dear Parents/Guardians,
September 14, 2007

I am currently working toward a Master's degree in Curriculum and Instruction at Moravian College. This program design allows me to remain current with the most effective teaching practices and provide your child with the best learning experiences. In order to earn my degree I am required to conduct a study of my teaching practices.

This year from 9 20/07 to 11/24/07, I plan to study the effects of teaching students how to form questions from expository text, summarization skills, and critical thinking. All of these skills are necessary for students to become independent thinkers. The study question also correlates with the anchors in the PSSA reading test currently taken by your child. In my research I have found that, students perform better on the standardized testing when they are given instruction in summarization skills and forming their own question while using the textbook from the classroom. I believe that instructing your child in these skills will improve their educational experience in the eighth grade. There are no perceived risks associated with this study.

In my study, I will be collecting data from student writings, observed behaviors, student surveys, test results and grade point averages. I am asking permission to use data pertaining to your child's involvement in summarization, questioning, and critical thinking. Participation in the study is voluntary and will not affect your child's grade in any way. Students may withdraw from the study at any time without penalty. No changes in the amount or quality of class work will occur in this study. All student names, student information, school location and faculty names are kept confidential by using composites and pseudonyms. All research materials are secured in a protected location. During the study, anonymous research data may be shared with my research associates and my professor.

If you have any questions about my research please contact me by note, phone (484-373-6110), or e-mail khontz@ . You may also contact Mrs. Traci Knoph, the building guidance counselor, concerning this study at (484-373-6110). In addition, our school principal has approved the study. My facility sponsor is Dr. Joseph Shosh, who can be contacted ay Moravian College (610-861-1482) or by e-mail jshosh@moravian.edu. Please sign and return the consent form below. Thank you for your cooperation.

Sincerely,

Karl G. Hontz
Eighth Grade Teacher

Please detach and return to Mr. Hontz

I attest that I am the child's legal guardian and that I have received a copy, read, and understand this consent form.
I am willing to have my child participate in Mr. Hontz's research on instructing students in critical thinking, questioning and summarization.

_____ Yes _____ No

Parent/guardian signature _____

Child's name _____

Child's signature _____

Date _____

Appendix D: CMT Assessment Form Model

Appendix D: CTM Assessment Esssay Model

CTM WITHIN STANDARDS-BASED REFORM

In the following critical thinking measure, students are given a problem that is framed around concepts and a specific request for displaying an intellectual operation, in this example, an evaluation response. Students are provided different accommodations in reading and writing to allow them the full range of their response.

URBAN CENTERS

Attached is a map of one area of Eastern Oregon. Look carefully at the map and think about the size of the cities shown, and the location of the major highways, other transportation centers like airports, and geographic, political, cultural and economic features. By looking at the map carefully, you should be able to identify the one city that would be considered the "urban center" of the area. An urban center is a city and its surrounding area that represents the largest population of an area, and large economic, political, and cultural systems.

First, on the line below, write down the name of the city you believe represents the urban center of the area shown on the map.

_____

Now, explain why you think that city is the urban center of this area. Remember to use ideas about geography, and economic, cultural, and political systems when writing your answer.

_____

_____

_____

_____

_____

_____

_____

Appendix E: Reading Survey

Textbook/Handout Reading Survey*

Read each question and pick a response between 1 and 5. 1 is you never do what is ask in the question and 5 is you always do what is ask in the question.

1. Do you read over the Table of Contents, chapter headings, or column headings of a book/handout before you begin studying the book/handout?

1. never 2. almost never 3 sometimes 4 almost always 5 always

2. Before you begin to study a book/handout, do you take 10 minutes to thumb through the book/handout to check for the presence of study aids such as glossaries, summaries, outlines, italicized or bold-faced words, and charts?

1. never 2. almost never 3 sometimes 4 almost always 5 always

3. Do you take notes when doing an assigned reading?

1. never 2. almost never 3 sometimes 4 almost always 5 always

4. Do you write down questions that you have about an assigned reading so that you can ask them in class?

1. never 2. almost never 3 sometimes 4 almost always 5 always

5. Do you look up words with which you are unfamiliar when you are doing an assigned reading?

1. never 2. almost never 3 sometimes 4 almost always 5 always

6. Do you read review questions and summaries of a chapter before you read a chapter in full?

1. never 2. almost never 3 sometimes 4 almost always 5 always

Appendix E: Reading Survey cont.

7. Do you consciously relate (think about) what you are reading to what you already know about the subject?

1. never 2. almost never 3 sometimes 4 almost always 5 always

8. Do you restate in your own words the main idea of a section that you are reading?

1. never 2. almost never 3 sometimes 4 almost always 5 always

9. Do you test your understanding of what you read by taking a few minutes after each section in a chapter to recall a few facts from the reading?

1. never 2. almost never 3 sometimes 4 almost always 5 always

10. Do you use your assigned readings to predict lecture discussion and test questions?

1. never 2. almost never 3 sometimes 4 almost always 5 always

11. Do you try to make connections or find similarities between what you read and your life?

1. never 2. almost never 3 sometimes 4 almost always 5 always

* Adapted from: University of Tennessee freshman reading habit survey UT English Dept.

Appendix F: Revised Bloom'sTaxonomy

Sources: Revised Bloom's Taxonomy site one http://www.coe.uga.edu/epltt/bloom.htm Anderson & Krathwohl, 2001			
Critical Thinking Activity [arranged lowest to highest]	**Relevant Sample Verbs**	**Sample Assignments**	**Sample Sources or Activities**
1. Remembering Retrieving, recognizing, and recalling relevant knowledge from long-term memory, eg. find out, learn terms, facts, methods, procedures, concepts	Acquire, Define, Distinguish, Draw, Find, Label, List, Match, Read, Record	1. Define each of these terms: encomienda, conquistador, gaucho 2. What was the Amistad?	Written records, films, videos, models, events, media, diagrams, books.
2. Understanding Constructing meaning from oral, written, and graphic messages through interpreting, exemplifying, classifying, summarizing, inferring, comparing, and explaining. Understand uses and implications of terms, facts, methods, procedures, concepts	Compare, Demonstrate, Differentiate, Fill in, Find, Group, Outline, Predict, Represent, Trace	1. Compare an invertebrate with a vertebrate. 2. Use a set of symbols and graphics to draw the water cycle.	Trends, consequences, tables, cartoons
3. Applying Carrying out or using a procedure through executing, or implementing. Make use of, apply practice theory, solve problems, use information in new situations	Convert, Demonstrate, Differentiate between, Discover, Discuss, Examine, Experiment, Prepare, Produce, Record	1. Convert the following into a real-world problem: velocity = dist./time. 2. Experiment with batteries and bulbs to create circuits.	Collection of items, diary, photographs, sculpture, illustration
4. Analyzing Breaking material into constituent parts, determining how the parts relate to one another and to an overall structure or purpose through differentiating, organizing, and attributing. Take concepts apart, break them down, analyze structure, recognize assumptions and poor logic, evaluate relevancy	Classify, Determine, Discriminate, Form generalizations, Put into categories, Illustrate, Select, Survey, Take apart, Transform	1. Illustrate examples of two earthquake types. 2. Dissect a crayfish and examine the body parts.	Graph, survey, diagram, chart, questionnaire, report
5. Evaluating Making judgments based on criteria and standards through checking and critiquing. Set standards, judge using standards, evidence, rubrics, accept or reject on basis of criteria	Argue, Award, Critique, Defend, Interpret, Judge, Measure, Select, Test, Verify	1. Defend or negate the statement: "Nature takes care of itself." 2. Judge the value of requiring students to take earth science.	Letters, group with discussion panel, court trial, survey, self-evaluation, value, allusions
6. Creating Putting elements together to form a coherent or functional whole; reorganizing elements into a new pattern or structure through generating, planning, or producing. Put things togther; bring together various parts; write theme, present speech, plan experiment, put information together in a new & creative way	Synthesize, Arrange, Blend, Create, Deduce, Devise, Organize, Plan, Present, Rearrange, Rewrite	1. Create a demonstration to show various chemical properties. 2. Devise a method to teach others about magnetism.	Article, radio show, video, puppet show, inventions, poetry, short story

Appendix G: Question Type Checklist for Student Use

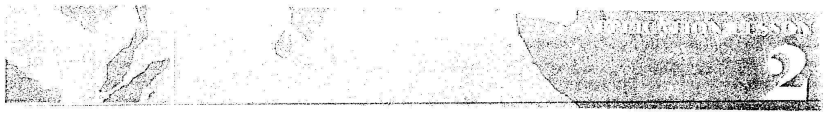
Name _____

Blooms Taxonomy

Read your question and check the box that applies

Level	Descriptors	Check if this type
Knowledge	remembering of previously learned material; recall (facts or whole theories); bringing to mind Terms: defines, describes, identifies, lists, matches, names	
Comprehension	grasping the meaning of material; interpreting (explaining or summarizing); predicting outcome and effects (estimating future trends). Terms: convert, defend, distinguish, estimate, explain, generalize, rewrite.	
Application	ability to use learned material in a new situation; apply rules, laws, methods, theories. Terms: changes, computes, demonstrates, operates, shows, uses, solves.	
Analysis	breaking down into parts; understanding organization, clarifying, concluding. Identify parts: See Related Order; Relationships; Clarify	
Synthesis	ability to put parts together to form a new whole; unique communication; set of abstract relations. Terms: combines, complies, composes, creates, designs, rearranges	
Evaluation	ability to judge value for purpose; base on criteria; support judgment with reason. (No guessing). Terms: appraises, criticizes, compares, supports, concludes, discriminates, contrasts, summarizes, explains	

Appendix H: Summarization Template



ACTIVITY G *Expository Writing—Summary*

Writing Strategy—Summary

Step 1: LIST (List the details that are important enough to include in the summary.)
Step 2: CROSS OUT (Reread the details. Cross out any that you decide not to include.)
Step 3: CONNECT (Connect any details that could go into one sentence.)
Step 4: NUMBER (Number the details in a logical order.)
Step 5: WRITE (Write your summary.)
Step 6: EDIT (Revise and proofread your summary.)

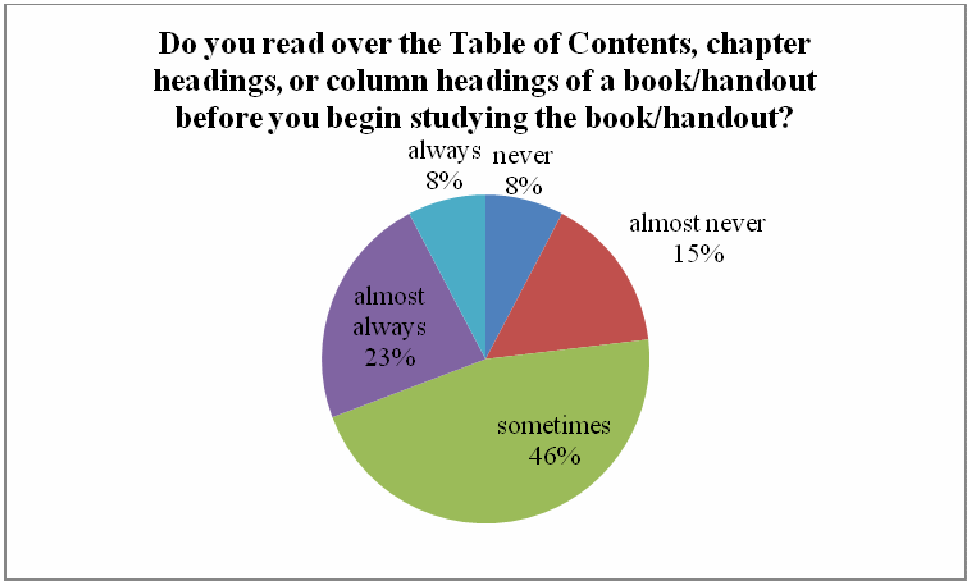
Planning Box
(topic)
(detail)
(detail)
(detail)
(detail)
(detail)
(detail)
(detail)
(detail)
(detail)

Directions: Write your summary on a separate piece of paper.

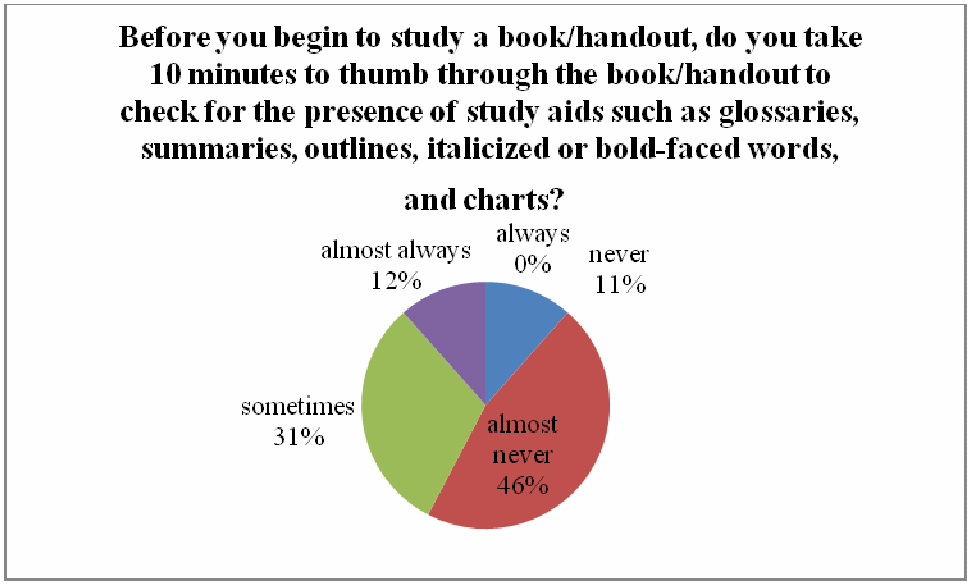
Student Book: Application Lesson 2 **27**

Source Buckle Down Pennsylvania PSSA: 8 Reading Buckle Down Publications Iowa City, IA Brown, M. (Eds.). (2006).

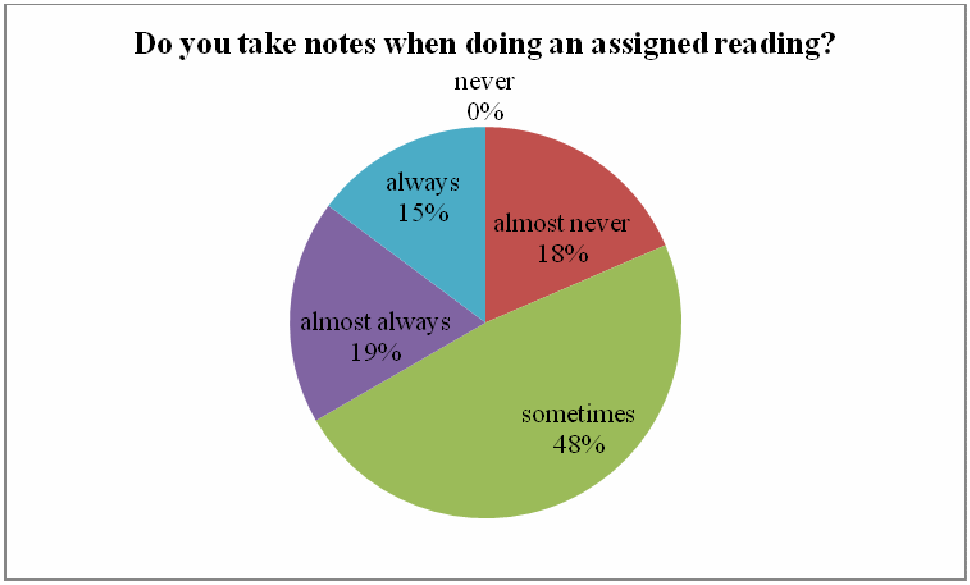
Appendix I: Reading Survey Question 1



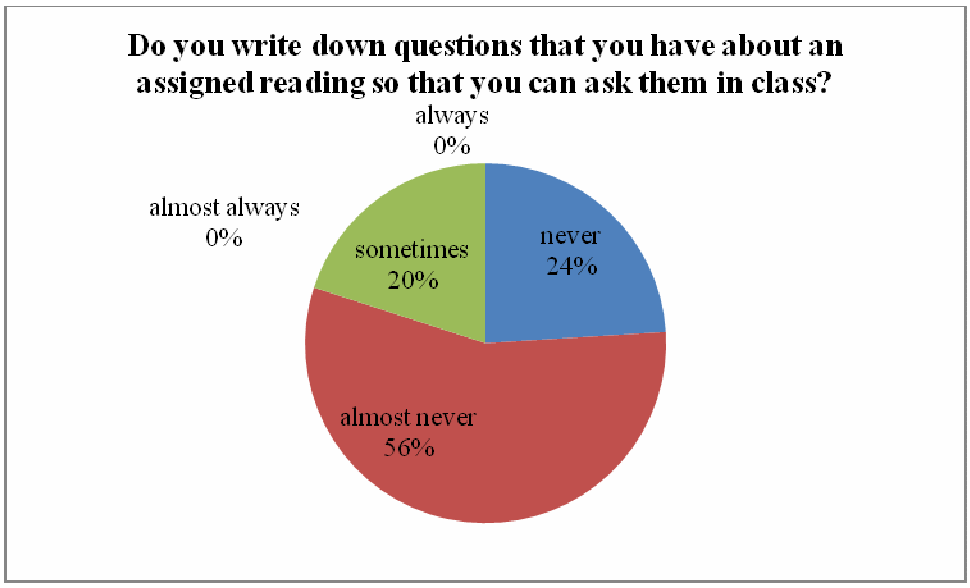
Appendix J: Reading Survey Question 2



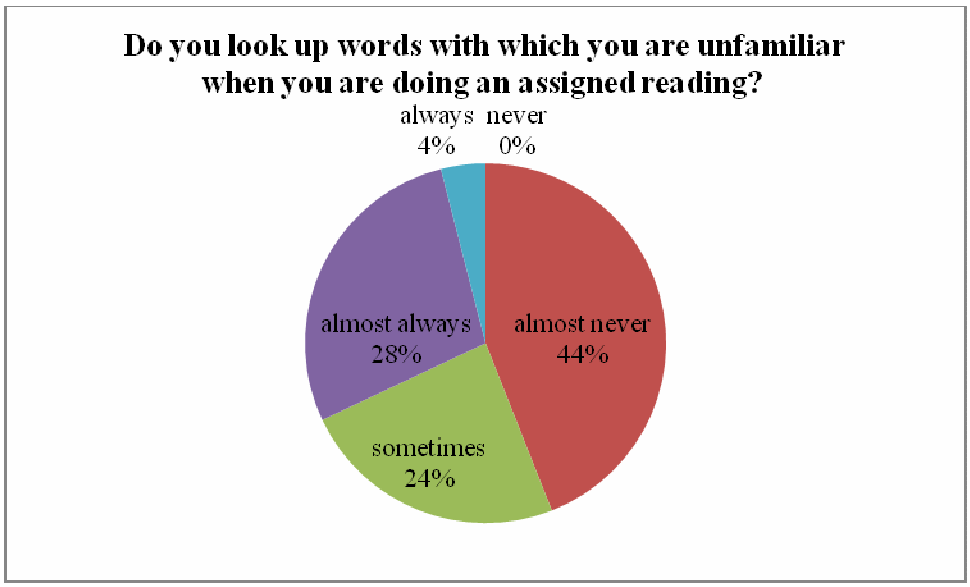
Appendix K: Reading Survey Question 3



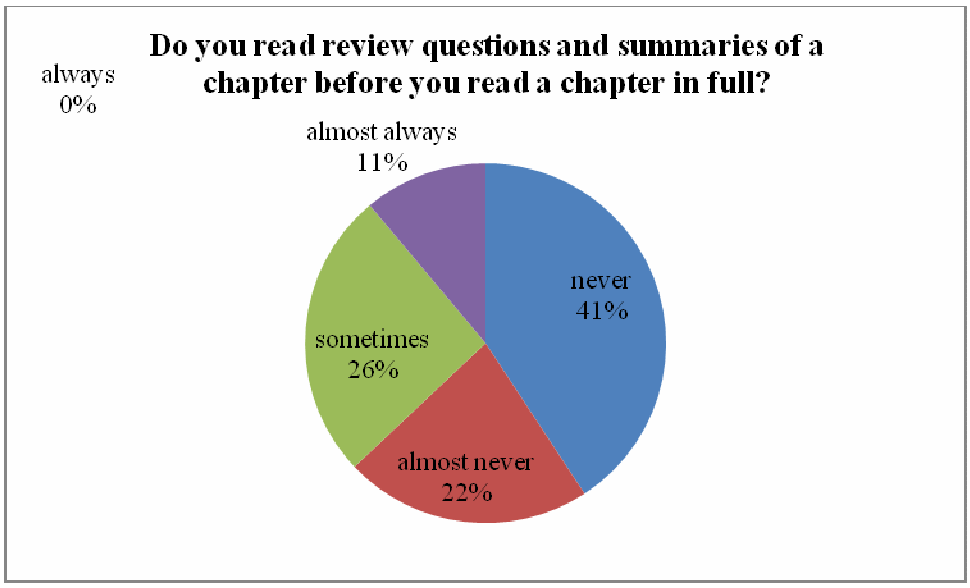
Appendix L: Reading Survey Question 4



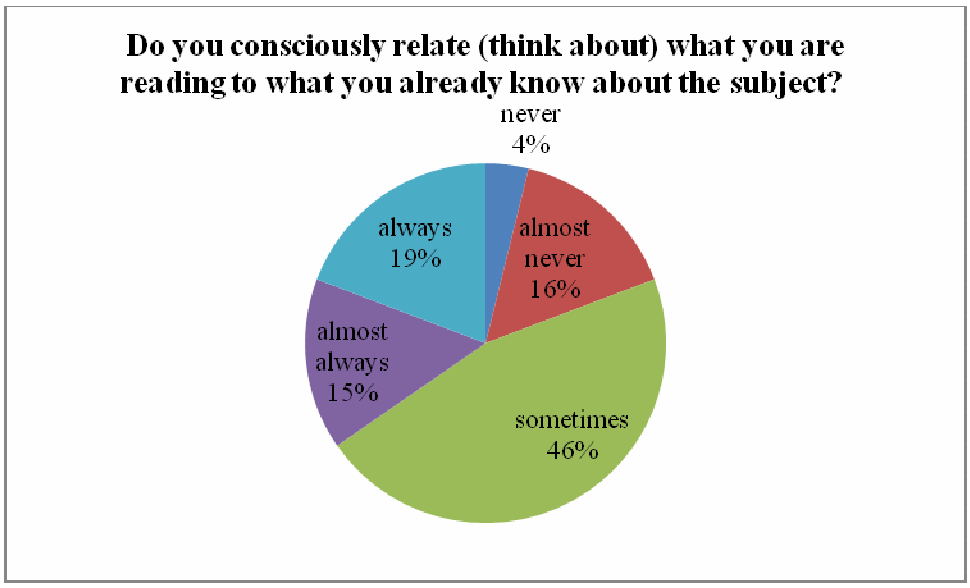
Appendix M: Reading Survey Question 5



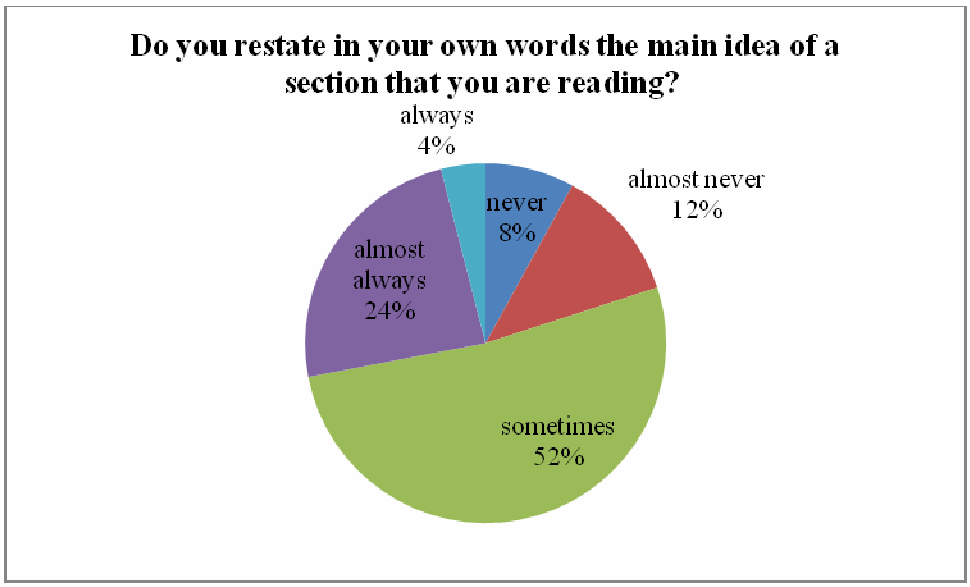
Appendix N: Reading Survey Question 6



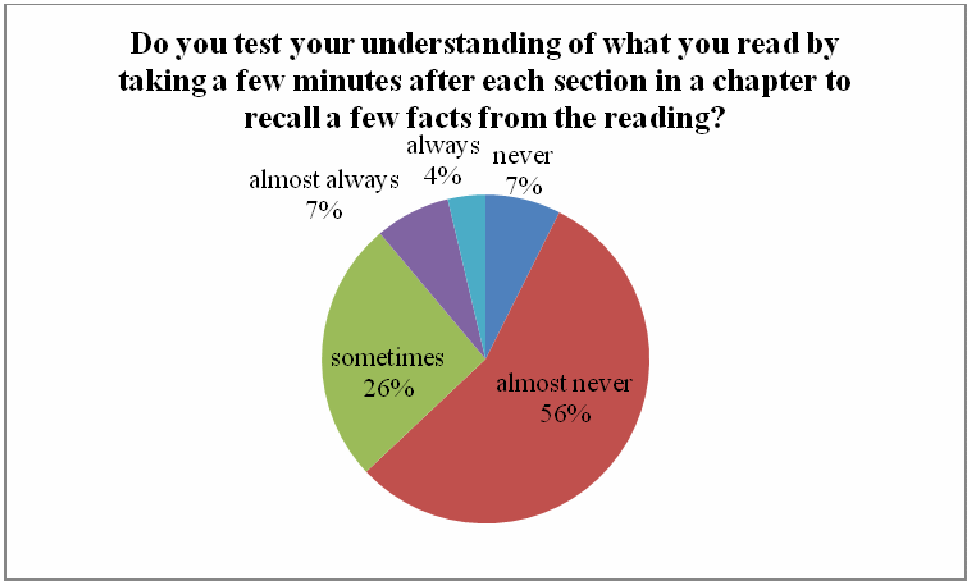
Appendix O: Reading Survey Question 7



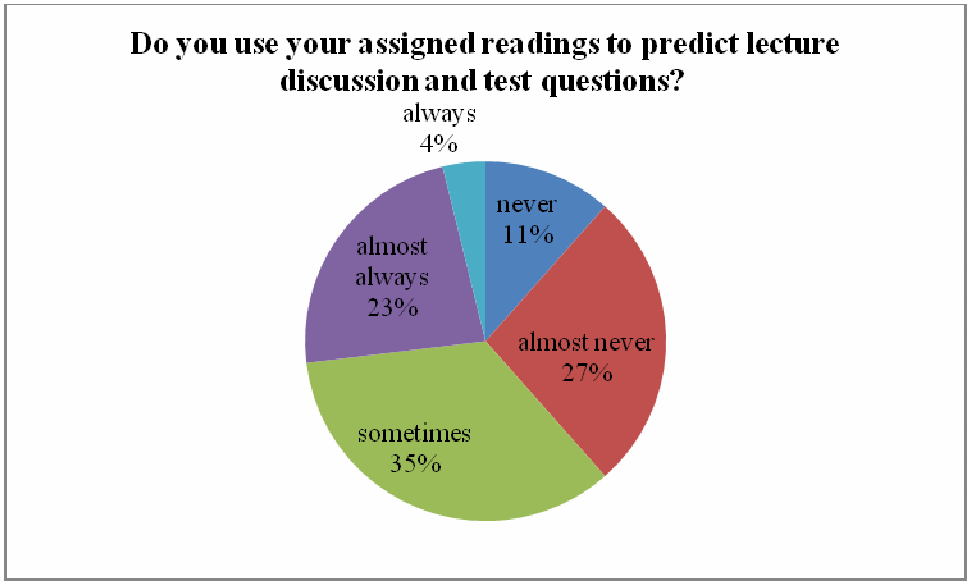
Appendix P: Reading Survey Question 8



Appendix Q: Reading Survey Question 9



Appendix R: Reading Survey Question 10



Appendix S: Reading Question 11