Question answer relationships: The effect and use of a questioning strategy with sixth-grade literature studies

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Question answer relationships: The effect and use of a questioning strategy with sixth grade literature studies

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The University of Arizona, 1989

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QUESTION ANSWER RELATIONSHIPS: THE EFFECT AND USE OF A QUESTIONING STRATEGY WITH SIXTH GRADE LITERATURE STUDIES

BY

STACIE COOK EMERT

A Thesis Submitted to the faculty of the

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THE UNIVERSITY OF ARIZONA

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STATEMENT BY AUTHOR

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APPROVAL BY THESIS DIRECTOR

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Patricia L Anders — April 5, 1989

P.L. Anders
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Date

To Mom: I thank you for all of your love and support.

I love you.

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ABSTRACT

This study investigates and assesses the effects of the QARs (Questions Answer Relationships) strategy on sixth grade students using a literature program. QARs is a strategy designed to help students better answer teacher and text questions by being able to categorize questions.

One sixth grade, consisting of twenty-four students, participated in the study as the treatment group. A second sixth grade, consisting of twenty-four students, was used as the control group. Procedures included three days of training, four days of maintenance, and five days of students generating their own questions based on the QARs strategy. This was followed by one day of post test.

The data was analyzed by comparing the total response scores of both groups on a set of comprehension questions and with the treatment identifying questions by using the QARs categories.

Results indicate that training in QARs increases comprehension and enables students to answer with greater detail in responses.

INTRODUCTION

The purpose of this chapter will be to present the history which lead up to the beginning of this research. It will include information about my personal background that relates to this project, how interest in the topic of questions developed, statement of research hypotheses, provide definitions of terms important to the study, and discuss limitations of the research.

Background

A few years ago the term "whole language" seemed to pop up in almost all conversations with teachers. Everyone wanted to know if they were whole language teachers and if they had whole language classrooms. I, being new to the professional world of education, was unsure if I even knew what the term meant. I asked questions and thought about "whole language" a lot. The strange thing was that no matter with whom I talked about whole language, everyone seemed to have a little different view. I decided that whole language was a term that many people were using to describe a variety of activities. Each individual had interpreted and used whole language in different ways. I too was going to have to make decisions on how I would use whole language in my classroom to benefit my students.

Being a new teacher was an advantage; yet also a problem. I didn't have to worry about letting go too many old habits. My undergraduate education had provided some methodology supporting children's writing based on their own interests, reading literature instead of basals, and for reading in the content areas. However, my inexperience created a problem. It was difficult to convince established, skill oriented teachers that my methods would work with students. In the context of basals, work sheets, and skills centered curriculum, I became confused and decided I needed more knowledge. I was, as Ken Goodman pointed out to me, in the state of disequilibrium. Fortunately, not for long.

I've sorted through my thinking and have made decisions about the best ways to teach students. However, these changes continue as I learn both about children and about new research in various educational and related fields. I have realized that sometimes whole language is a "catch all" term. It means different things to different people. But, the bond that holds it all together is that the child is always the main concern, not finishing the textbook or passing a test; and the curriculum is child-centered, not teacher-controlled. Everything that occurs in the classroom occurs in a meaningful context for the child with the

child's interests and needs always being top priorty. The child is included in decisions that affect class management, curriculum selection, and discipline. The student is an active participant instead of a passive learner. A curriculum which is "life experience" oriented (Goodman, K., Smith, Meredith, and Y. Goodman, 1987). This is where groups of students work on thematic units or theme-based projects. In the process, they learn science, social studies, math, and language arts.

The schema or psycholinguistic theory supports this view of the student. It has two key components: 1) that skilled readers draw simultaneously on several different sources of knowledge as they read text; and 2) that skilled readers reconstruct progressively refined hypothesis about a text in order to understand, learn, or remember it.(Duffy, 1984, p. 28) The first aspect illustrates the interactive nature of reading, while the second describes the meaningfulness of the reading process and the necessary active involvement by the reader.

The reading process also has essential characterisitics that cannot vary. Reading must start with text in some graphic form; the text must be processed as language, and the process must end with construction of meaning. Without meaning there is no reading, and readers cannot get to

meaning without using the process (Goodman, K., Smith, Meredith, and Y. Goodman, 1987, p. 203).

I don't feel I have a crystal ball or a know-it-all perspective. My views vary and change as I read current research and listen to what others have to say about their experiences. I've made mistakes and learned from them. I've achieved accomplishments and learned from them too. I continue to gather information; it either confirms what I think I already know or disconfirms my knowledge giving me the opportunity to alter my schema or to replace old knowledge with new knowledge. Either way, I continue to grow and learn both personally and professionally.

Interest in the Topic of Questions

I became interested in the topic of questioning when it was discussed in graduate classes. I began to realize that questions are used on a daily basis. A professor had mentioned that some questions initiate different type of answers and thinking processes than other types of questions. I hadn't ever thought about it. I began to wonder if I was asking "good" thought provoking questions. Thus with a purpose in mind, I proceeded to evaluate my own questioning techniques.

In the Spring of 1988, I researched the types of questions I was asking my sixth grade students. I selected

one out of the five current literature groups. Each group met on a daily basis to share and discuss their reading logs. Once or twice a week, each group met with me for a discussion of how they were progressing. It was during these meetings that I began to tape the discussions. I wanted to find out what type of questions I was asking and what sorts of thinking processes I was promoting. After taping for several weeks, I realized that I needed to know more about question categories and ways to question students. From these sessions I had learned that I often asked the same type of questions. I also wanted to be able to identify additional types of question strategies to use within my classroom.

I then began researching the literature on questioning. This was the beginning of my literature review and chapter two of this thesis. I wanted to know about the various types of question categories and taxonomies and to identify a strategy that helps students answer questions effectively using a variety of thinking processes. I found much written about questioning types and/or categories, question-answer relationships, and several question taxonomies. Many of these people have developed question asking strategies that are recommended for classroom implementation.

Statement of Research Hypotheses

This research implements Raphael's (1982, 1986) Question Answer Relationship(s) strategy (QARs) using literature as the reading material. I hypothesized that the strategy would increase students' comprehension, increase students ability to identify question categories, and increase their ability to locate the source of information that helped them to answer specific questions. I also thought their written answers to questions would include more detailed responses, therefore indicating elaborative thought that would lead to better construction of meaning.

Terms Defined

P. David Pearson and Dale D. Johnson have developed a question taxonomy (1978). They discuss three kinds of questions or question-answer relationships (QARs): Textually Explicit, Textually Implicit, and Scriptually Implicit. Textually Explicit questions have obvious answers right there on the page. These are sometimes referred to as factual recall questions. Textually Implicit questions have answers on the page, but the answers are not so obvious. The reader may have to put ideas from one part of the text with ideas from another section of the text. For Scriptually Implicit questions, a reader needs to use his/her own script (schema) or prior knowledge to answer the

question. Pearson and Johnson also suggested that questions cannot be identified as belonging to any one category if only judged in isolation; rather questions can only be categorized when judged in relation to the text, the reader's prior knowledge and the expected answer.

From this taxonomy, Taffy Raphael (1982, 1986) developed a question-answer relationship (QAR) strategy to be implemented by teachers with students. The original QARs program used Pearson and Johnson's three categories but relabeled for student's use as "Right There", "Think and Search", and "On My Own", respectively. Raphael (1984) found that the valaue of QAR instruction lies in the way it clarifies a student's approach to the task of reading the text and answering questions posed in textbooks or by teachers. The strategy helps students use both information in the text and information from their own knowledge.

In 1986, Raphael modified the QAR strategy. It was modified to make it easier for students to identify only two choices rather than four in the initial stages of learning the QAR strategy. It now begins with two categories, "In the Book" and "In My Head". These categories locate the primary source where the information can be located for answering questions. Once students have a clear understanding of the differences between the two categories

of "In the Book" and "In My Head", each is further developed.

The "In the Book" category is expanded to include two types of situations: "Right There" and "Think and Search" or "Putting It Together". "Right There" is when the answer to the question is stated explicitly in the text, within a single sentence. "Think and Search" is when the answer to the question is available from the text but requires the reader to put together information from different parts of the text.

The "In My Head" category is also divided into two parts. The two categories are "Author and You" and "On My Own". The significant distinction is whether or not the reader needs to read the text for the question to make sense.

Limitations

From a perspective of experimental design, this study is limited by a lack of randomization. One sixth grade class is the treatment/experimental group. The other sixth grade in the school is the control group. Although the two classrooms have not randomly been selected from a larger population of sixth graders, the students have been placed into each sixth grade from the population of the students

who attend the school. This research is dealing with only one grade level, sixth.

CHAPTER TWO

AN OVERVIEW OF QUESTIONING

Not a day, not even an hour does a person go through without hearing or asking a question. Many are asked and answered without thought or contemplation. For example, how many times have you been greeted with a friendly "How's it going?" or a "How are you?" and have then replied routinely "Good. And you?" But for teachers, questioning is not so relaxed -- or at least shouldn't be. Questioning is a main tool used by educators to motivate, instruct, and evaluate students. Yet despite the wide use of questions, the quality, degree of importance, and appropriateness of use is not always evident.

Questions come in a variety of forms and categories. Many educational researchers have labeled and categorized questions. Each has offered a little, or sometimes not so little, twist in viewing questions. Some research suggests that teachers offer insufficient help for students to cognitively process answers. Apparently, students are not able to support answers with sound reasons or value statements (Guszak, 1967; Hare-Chou & Pulliam, 1980; Pearson & Johnson, 1978; Sanders, 1966). Many teachers ask simple recall questions and students have figured out what the teachers want as answers (Guszak, 1967). This literature

suggests that it would be beneficial for teachers to identify the type and the amount of specific questions they ask and make adjustments acccordingly.

A Look at Question Taxonomies

Simple? Right. But how can one classify or categorize the types of questions being asked of students? Well many people have spent a great deal of time trying to do just that. There have been several question taxonomies developed in an attempt to categorize questions. A taxonomy is described as the science of classification; laws and principles covering the classifying of objects (Webster's New World Dictionary, 1978, p. 1,458).

One of the best known educational taxonomies is Benjamin S. Bloom's TAXONOMY OF EDUCATIONAL OBJECTIVES: HANDBOOK I, THE COGNITIVE DOMAIN (1956). The idea was to classify educational objectives. In devising the taxonomy, the authors concentrated on the intellectual aspects of education. (HANDBOOk II: THE AFFECTIVE DOMAIN (1964) deals with the emotional and attitudinal aspects of education.) Within the cognitive domain, Bloom defined several categories of thinking to include all intellectual objectives in education. The main categories include: Knowledge, Comprehension, Application, Analysis, Synthesis, and Evaluation (See Table 1). One way each category was

defined was by using examples of questions that required students to engage in the specified kind of thinking.

Several researchers have used Bloom's work as a basis for their taxonomies or categorization systems. Norris M. Sanders (1966) deleted the sub-categories and renamed two of the categories. Sanders uses seven main categories: Memory, Translation, Interpretation, Application, Analysis, Synthesis, and Evaluation (See Table 2). But, the basic ideas underlying his system have come from Bloom.

He renamed Bloom's Knowledge category to Memory because the word "knowledge" is commonly used in education to refer to subject matter and he felt Memory better describes the intellectual activity and is parallel with the names of the other categories. In Bloom's Taxonomy, Comprehension is a main category with sub-categories of Translation, Interpretation, and Extrapolation. Sanders deleted the terms Comprehension and Extrapolation and used Translation and Interpretaion as main headings because they offer opportunities for distinct kinds of thinking.

According to Sanders' taxonomy, there are three factors to consider when determining the kinds of thinking that is to be brought to bear in the minds of students by any question. The first factor is the nature of the question itself. It must be considered in terms of its

classification in the taxonomy. A certain type of question may lead to a certain type of thinking. The second factor is that one must be aware of the prior subject knowledge that each student brings to the classroom. The third aspect concerns the instruction that precedes the asking of a question. It is incorrect to assume that a question inevitably leads to a single category of thinking or that all students are necessarily using the same mental processes to arrive at an answer. Thus, the thinking resulting from a question is influenced by the classroom context, specifically what the teacher elicits, enhances, or ignores when preparing to develop questions.

Francis P. Hunkins (1976) developed questions for both teachers and students by using Bloom's Cognitive Domain (1956) and Krathwohl's Affective Domain (1964). In his book, Involving Students In Questioning, Hunkins offers a clear definition of each category and has examples of questions and key words for helping to initiate the questioning process (See Table 3).

It is important to note that while all three state that a question should be classified at its highest level, the Bloom's Taxonomy of Cognitive Domain is not necessarily hierarchical. In 1956, it was claimed to be sequential and cumulative, but that notion was later challenged. In 1964

In the book on the affective domain, Bloom wrote that he wasn't sure if the cognitive taxonomy was a hierarchical ordering of cognitive objectives or a simple categorizing of cognitive processes with no ranking order at all (Hyman, 1979).

Whether it is a true hierarchical taxonomy or not, there are both simple and complex questions within each category. The implication is that all teachers from the primary grades through graduate school will find it possible to use every one of the categories in their classes. The differences in the questions offered at various grade levels should be in the complexity of the thinking, rather than in the kind of thinking (Sanders, 1966).

Hilda Taba (1966) views the teaching of thinking as an educational objective. She makes five theoretical assumptions to support this view. The first is that thinking can be learned and therefore can be taught. Second, thinking is an active transaction between an individual and the content of a program. Third, the processes of thought evolve by lawful sequence. Fourth, the prime dynamic of growth in cognitive performance involves a dual set of adaptations that function outwardly as coping and inwardly as organization. Lastly, thought can be studied as a psychological phenomenon and a logical system.

To operationalize the above assumptions, the concept of cognitive tasks was devised which permits both an identification of the clusters of learnable and teachable skills and the application of a sequence to the acquisition of these skills. There are three cognitive tasks. These are Concept Formation, Generalizing and Inferring Through Interpretation of Raw Data, and the Application of Known Principles and Facts to Explain and Predict New Phenomena. Within each task there are three sets of operations. These include: Overt Activities, Covert Mental Operations, and Eliciting Questions (See Table 4).

Question asking is a crucial factor for developing student skillfulness in the three cognitive tasks. Taba lists strategies to help teachers ask questions for these tasks. Some of these are discussed in the section on question strategies.

Ronald Hyman (1979) also bases his classification system on cognitive processes required in which to answer questions. He states the purpose of questions serves mainly to cause someone to think along a particular line. It serves a double purpose by its very nature: It prods the respondent's thinking to supply a response, and it directs that respondent to think about a particular topic (Hyman, 1979, p. 1).

Hyman has developed four main types of Cognitive Process Questions to categorize questions. These include: Definition, Empirical, Evaluative, and Metaphysical. Only the first three are usually used in a school setting. There in no hierarchy intended in this system. However, he suggests there is a matter of complexity in comparing question types. To show this, he has developed three question types: Production Information, Process Activity, and Response Clue (See Table 5).

Using a different approach, Frank J. Guszak (1967) researched questions he observed teachers asking. He categorized the questions and then determined what types of questions were most frequently used. To classify the questions he developed the Reading Comprehension Question-Response Inventory, which consists of six categories: Recognition, Recall, Translation, Conjecture, Explanation, and Evaluation (See Table 6). Guszak also studied the strategy elements involved in the single question. Guszak's study revealed that teachers employ two basic types of strategies as they question children about reading assignments. First, they control the nature of the exchange relative to each question. Second, they may pattern such individual question-response exchanges into larger wholes (Guszak, 1967, p. 267). The concepts of the

Question-Response Unit (QRU) and the Question-Response Episode (QRE) were developed to study the strategy elements.

The QRU represents the boundaries when the sections of an exchange can be illustrated. It contains the following elements: the teacher's initiating question; any subsequent remarks on the part of the teacher that might serve to extend, clarify, or cue subsequent student response; the referent in the reading materials for the question; the way in which the student subsequently dealt with the question; and finally, the phase where attention is shifted away from the initiating question.

The second focus relates to teacher question strategies which is the concept of QRE. This represents a combination of two or more QRUs. These can be related in four ways: Setting Purpose Follow-Up, Verification, Justification, and Judgmental. In his study of second, fourth, and sixth graders, there was a total of 1,226 Question-Response Unit patterns. Of these, 93 were Recognition, 797 were Recall, 5 were Translation, 66 were Conjecture, 62 were Explanation, and 203 were Evaluation. The most dominant pattern of interaction was a question followed by a single congruent response. This pattern is often associated with recall type questions.

There were 142 Question-Response Episodes for the second, fourth, and sixth grades. Out of this total, 67 were Setting Purpose Follow-Up, 33 were Verification, 36 were Justification, and 6 were Judgmental.

In a replication of the Guszak study, Victoria Chou-Hare and Cynthia Pulliam (1980) found two additional question types. The first is questions that can be answered by knowledge alone. Second, questions too general or were answered incorrectly or in apppropriately. Other than these two additions, their study verified Guszak's findings.

James J. Gallagher and Mary Jane Aschner (1966) use the term productive thinking for the basis of another taxonomy. They define productive thinking as divergent, convergent, and evaluative operations used by an individual to draw upon available past and present acts, ideas, and conclusions. It includes both the creative and critical-analytic dimensions of reasonings (1966). Using Guilford's classification system, Operations of Intellect (1956), Gallagher and Aschner developed five primary categories: Cognitive Memory, Convergent Thinking, Divergent Thinking, Evaluative Thinking, and Routine (See Table 7). The parameters of this theoretical structure include the operations of thinking, the content within which these operations are

performed, and the products that result from the performance of these operations upon the content.

Building on the Gallagher and Aschner classification system, Elizabeth Hunter (1972) developed the "Ask Questions" category of the Flanders Interaction Analysis Categories Program (FLICS). FLICS is used to help teachers become conscious of classroom talk and to help them to practice and modify their own talk and that of their students.

Taking the science of questioning one step further, Wendy G. Lehnert developed a computer program, QUALM, to simulate how people use the information processing abilities in question answering. QUALM can be split into two fundamental processes: Understanding the Question and Finding the Answer.

Before a question can be answered, it should be understood. In Lehnert's program, there are sixteen principles to understanding a question (See Table 8). The process used in understanding questions operate on various levels. In Lehnert's computer program all questions must pass all levels before a memory search can begin. The four successive levels of understanding are: Conceptual Parse, Memory Internalization, Conceptual Categorization, and Inferential Analysis.

Within QUALM is a Questional Analyzer which examines a question and assigns a conceptual category (one of thirteen) to that question (See Table 8). Each categorization recognizes essential conceptual differences in questions. These differences are ultimately reflected by the types of answers that are appropriate for a given question. These are later recategorized by Inferential Analysis. This examines a question, considers contextual factors, appeals to the conventions of dialogue, and concludes that "At this time, in this setting, this question must mean ...."

More recently, the work of Pearson and Johnson (1978), Raphael (1980), and Raphael and Winnocott (1984, 1986) have examined the relationships between questions and answers. Pearson and Johnson's Question Taxonomy attempts to capture the relationship between information that has to come from a reader's store of prior knowledge, referred to as scripts and schema (1978)and information provided by an author in a text. There are three kinds of questions in the Pearson and Johnson Question Taxonomy. These include: Textually Explicit, Textually Implicit, and Scriptually Implicit (See Table 9). Textually explicit questions have obvious answers right there on the page. These are sometimes referred to as factual recall questions. Textually Implicit questions have answers that are on the page, but the answers are not so

obvious. For Scriptually Implicit questions, a reader needs to use his or her own script in order to come up with an answer. A script or schema is the information that has to come from a reader's store of prior knowledge (Pearson & Johnson, 1978, p. 157).

Based on the Pearson and Johnson Question Taxonomy, Raphael (1982) developed a Question Answer Relationship (QAR) Program to be used by students in the classroom. Pearson and Johnson's three categories of Text Explicit, Text Implicit, and Script Implicit were restated for children using the terms "Right There", "Think and Search", and "On My Own", respectively. In 1986, the program was revised to two categories with two types in each category: "In the Book" and "In My Head". Each category was expanded to contain two types of situations. The situations of "In the Book" are "Right There" and "Think and Search" or "Putting It Together". The situations of "In My Head" are "Author and You" and "On My Own" (See Table 10-a).

Raphael uses this category system for labeling questions as the basis for a classroom practice. Her research with fourth and sixth grade students has demonstrated that students with QAR training have both superior responses to questions and identify the question answering strategy required by each question more often than

those students without the training (Raphael & Winnocott, 1984).

Selected Question Asking Strategies

There are a variety of strategies designed to promote teachers' use of questioning for comprehension and learning. Some strategies are intended to help develop thinking skills while others may increase students' autonomous or independent thinking. Teachers will ask better questions by knowing the qualities of good questions and not relying on one specific type of question (Guszak, 1967).

So how can teachers develop students' thinking skills and autonomous thinking? The answer - Ask good questions. This includes questions that are authentic to the reader; questions that may have a variety of responses. Sometimes, in asking good questions, the questioner may not always know the answers. In asking good questions there are a few recommendations most educators would agree upon: 1) make sure students have the requisite scriptal information needed to draw logical inferences between text segments; 2) know the thinking process called upon by the question; and 3) accept variety in the student responses (Pearson & Johnson, 1978).

Taba (1966) suggests that it is also important to ask open-ended questions and to provide the opportunity for

student responses on different levels of abstraction, sophistication, and depth.

Taba suggests another strategy that involves matching the pace of the question to the students' capacity for mastering the specific skills currently being instructed at each step. Each sequence of questions follows the developmental sequence of acquiring the skills and models necessary for the cognitive task. To accomodate the principle of pacing, each question is pursued long enough to permit a considerable number of students to respond. Such pacing could be graphically shown as follows:

	Student 1	Student 2	Student 3
1. What?			
2. Why?			
3. What does it mean?			

Taba claims that this permits the accumulation of a variety of responses which represents different levels of abstraction and models of conceptualization, assuring that all students have an appropriate recognizeable model of each step to which they can relate (Taba, 1966).

Hyman (1979) suggests a strategy that includes three types of teaching strategies. These are classified and named according to the essential activity of the teacher. These include: Presenting, Enabling, and Exemplifying.

In the Presenting Strategy, the teacher is the more active participant physically, cognitively, and emotionally. S/he selects the information, organizes it, presents it, re-presents it in an effort to be clear and comprehensible, and questions the students in order to assist their understanding. The students are usually expected to act on their new learning out of the class rather than in class or in connection with the presentation.

The next strategy is Enabling. The students engage in some activity, usually under the teacher's supervision. The activity concerns a problem to be solved. Teachers need not participate. When they do they must remember that their task is to "enable" students, not to solve the problem for them. The teachers encourage and allow students to take the lead as the activity progresses. Here, the students are the more active participants. Examples of activities within this strategy include: discussion, brainstorming, laboratory activities, and problem solving.

The third strategy, the Exemplifying Strategy, is suited to the teaching of skills, processes, and values.

The teacher can show the students how to do or act in a variety of situations. By exemplifying, the teacher allows the students to see for themselves the consequences of actions, as well as how to perform them. The teacher can use this strategy to show how to hammer, how to fix a flat tire, how to conduct research, how an honest person acts, and how a person respects other individuals.

The three teaching strategies relate to other aspects of teaching. One of these being goals. Goals are categorized into two aspects, social and individual. Social goals help students understand life and become participating members of society. Key concepts include: social, political, and economic elements. Individual goals focus on students functioning as persons. Teachers help students develop in three realms, knowledge and thinking (the Cognitive Realm), values and emotions (the Affective Realm), and the body (the Physical or Psychomotor Realm). Hyman shows an interrelationship between teaching strategies, goals, and types of content taught (See Table 11).

Some Misuses of Questioning Techniques

Questions are an important tool of the educational profession. They dominate instructional time in most classes. Questions are important but only when used effectively in lessons that stimulate thinking and lead to

productive learning and retention of content material. If use inappropriately, questions can become weapons. They can put people on the defensive - freezing up a learning opportunity rather than making the most out of it. Some questions foster only the "right answer". This puts focus on the correct response rather than promoting the process by which students construct knowledge from text material.

Pearson and Johnson (1978) discuss a poor questioning technique called "Guess What's In My Head". The teacher has a specific response in mind. If the student fails to give the desired response, the teacher says, "Uh huh" or "Okay" and calls on other students until someone has guessed what's in the teacher's head.

Herber (1978) and Pearson and Johnson (1978) have stated that the issue is not if to use questions, but when to use them. "If questions are used to teach students how to read material, they are being misused. If they are being used to reinforce skills which the students already have, they are being used well" (Herber, 1978 pp. 197-198). Thus, Herber prefers to start with declarative statements and then proceed to the use of questions for guiding students' reading.

The point being made is that many teachers are asking questions that children aren't able to answer. There are

several reasons why students may have difficulty answering questions. It may be they don't have the skills to find the answer explicitly in the text or they haven't been taught to infer the data from the text. If a student fails to respond or responds inaccurately, they frequently are thought to be poor readers. Yet, the problem may lie within the question or within the amount of prior knowledge the student has with question answering. Teachers should not be quick to label the child - but label the type of question and come up with a strategy to better link the two for success.

Guszak (1967) and Hare-Chou and Pulliam (1980) concluded that most questions asked are literal comprehension questions with retrieval of trivial factual makeup of stories. A second finding showed that successful students know what the teacher wants and respond accordingly. Third, questions are answered and teachers are accepting those answers with little support for the students' answers. "If educators want to condition students for irresponsible citizenship, it seems quite appropriate to ask children for unsupported value statements, a practice which is very frequent in the reading circle ...." (Guszak, 1967, p. 269).

Final Remarks

The points being made show that questions are an intricate part of the teaching profession. Teachers need them; students need them. However, they need to be used wisely and effectively. In making a plan to use questions, a teacher needs to first know and understand one's own beliefs. That is, he or she needs to know where they are going, the direction of his or her professed philosophy and the best methodologies to get to that destination. Second, a teacher needs to know his or her students. Know the whole student, their strengths and weaknesses and use these to facilitate learning. Third, be aware of the variuos types of questions. Some questions may lead to success or to failure. It is important to know why to ask one question versus asking another type of question. Also, a teacher must know the content behind the questions.

Don't be afraid to ask a question, but remember to be open to the responses. One can lead a horse to water, but can't make him drink until he wants to. Get the students thirsty for knowledge by creating an environment condusive to risk taking. Then, teach students how to anaylze a question in order to determine answers and aid comprehension.

CHAPTER THREE

METHODS

The methods involved in this study included 1) selection of literature for the subjects to read; 2) development of questions by qualifieded teachers along the guidelines of Raphael's QARs; 3) instruction of students; and 4) analysis of the results. This section describes the procedures followed for the study and includes selection of subjects and scoring point system utilized for the analysis of data.

Subjects

Twenty-four students participated in the experimental/treatment group, ten girls and fourteen boys ranging from 10 to 13 years of age. Of the twenty-four students in the class, three have been retained for one year and one student has been retained twice. Five students currently attend the learning disability resource classroom. These students leave the regular classroom and go to the LD Resource teacher from a half hour to two hours a day depending on their Individualized Education Plan. Four students currently attend the gifted and talented resource classroom particpating in a one and a half hour pull-out program once a week. The ethnic make-up includes 40% Hispanic, 48% White, 4% Black, and 8% Indian. Based on the

1987 ITBS scores in reading comprehension, the average stanine score is 4, with a range of scores reported in stanines 1 to 7: 10% of the students' scores fell into stanine 1, 5% stanine 2, 19% stanine 3, 14% stanine 4, 19% stanine 5, 24% stanine 6, and 10% reported a stanine of 7.

There are twenty-four students in the control group, twelve girls and twelve boys ranging from age 10 to 13 years of age. Of the students in this class, two have been retained once and one student has been retained twice. Two students currently attend the gifted and talented resource classroom attending a one and a half hour hour pull-out program once a week. There are no students currently enrolled in the LD resource program. The ethnic make-up includes 54% Hispanic, 42% White, and 4% Black. Based on the 1987 ITBS scores in reading comprehension, the average stanine for this class is 5, 9% of the students' scores were reported as being in stanine 3, 18% stanine 4, 36% stanine 5, 32% stanine 6, and 5% had a stanine of 7.

Both of these classes are in a school in a large metropolitan area in the southwestern part of the United States. Many of the students' parents are employed by the Air Force. The socio-economic status ranges from families on public assistance to white collar workers. There are both single and two parent households.

Materials

Two books were used for this research project. The first book, On My Honor, written by Marlon Dane Bauer, served as the preperation and maintenance portion of the research. The first chapter of Nobody's Fault written by Patricia Hermes was utilized for the post test.

On My Honor has a predicted readability level of 5.3 based on the Fry readability formula. This book is realistic-fiction and is about two twelve year old boys. One boy, Tony, is very daring and adventurous. The other boy, Joel, is more careful and cautious about taking risks. The boys get permission to ride their bikes out to a park about ten miles away. They are on their honor to ride straight there and back. Tony, however, wants to climb the bluffs which are near the park. Joel does not want to climb the bluffs and does not know how to tell his friend. On the way to the park, Tony wants to swim in the river. Joel thinking that this may be less dangerous, nonetheless agrees. Tony, who is not a good swimmer, gets pulled under by the current and drowns. The remainder of the book is about how Joel reacts and deals with Tony's death, first with denial and then by confronting what has happened.

Nobody' Fault has a 4.5 readability based on the Fry readability formula and is also realistic-fiction. This is

a story about a brother and a sister. They have the "normal" sibling relationship that goes along with a twelve year old boy and a ten year old girl. Monsy, the brother, takes the riding lawn mower out to cut the grass. He knows he is not to do this unless an adult is present. Emily is upstairs playing a prank on her older brother when he falls off and is run over by the lawn mower. She feels to blame and guilty for his death. The remainder of the book deals with how she comes to understand that his death wasn't anybody's fault.

To teach students about QARs, eight questions were developed by the researcher for the first three chapters of On My Honor and for the first chapter of Nobody's Fault. Each set of questions included two questions from each of Raphael's (1986) category (see Appendix A). Two to three questions were developed for chapters four through seven of On My Honor, with an equivalent number from each category distributed among all questions (see Appendix B). This format was used so that students would have equal practice in both identifying and answering all question types. Chapters eight through twelve did not have questions developed because students were taught to develop questions to show understanding of the QARs categories. This was done so that the students would have practice constructing

questions based on the QARs categories. It was hypothesized that if the students could compose questions based on the categories that they would be better able to identify such categories.

The questions were written and then discussed by a group of three QARs specialists. These people had prior knowledge of the QARs strategy and had used it in either their classroom, research, or graduate course work. Each question was discussed to see if all agreed on the QARs category it was identified as. Any question that was not agreed upon was reworded or changed until total agreement was reached. One question had to be reworded for clarity.

A similar procedure was used to develop the dependant measure. The QARs specialists met with the researcher and discussed and improved eight open-ended short answer questions (see Appendix C). The response to each question was worth a maximum of four points.

Scoring

Students answers were read and scored based on a 0 to 4 point scale with a maximum of 32 points possible. The scoring system was as follows:

0 - If the answer did not match the text in any form

1 - If there was a partial match based from the text/background knowledge; but gave no examples or reasons

2 - If there was a partial match based from the text/background knowledge and gave an example or reason

3 - If there was a complete match; but gave a partial example or reason

4 - If there was a complete match and used examples or reasons to support response

Each paper was given a total score. It was based on these total scores that comparisons were made.

Each test was scored by two people to ensure a reliability of the score. When there was a diference in the total score an average score was used.

This scoring was used to determine if the students who had received the QARs training had a higher comprehension score than those who had not had the training.

Pre-Experiment Instruction

When students were questioned in September as to past reading instruction, it was found that all had primarily used only a basal reader. Literature had been used for book reporting and pleasure reading during sustained silent reading. Because of this, the students were asked to read the basal stories and to become reacqualnted with basic story elements (plot, theme, character, setting). Students were asked to read asigned stories from the basal in its entirety and then to write about the four story elements and how they applied to the story. Following this, students were asked to get into small groups and discuss the story and the story elements. Students were not asked to answer any comprehension check questions. This instruction continued for approximately two weeks. During this time students were encouraged to discuss their feelings and what they liked or disliked about what they were reading. Through discussing the story elements of each story, it was also suggested that they take some of these ideas back to their own story writing which was occurring on a daily basis through a process writing workshop.

After students had gotten back into the routine of school and felt comfortable with the class environment, it was time to implement further changes. Each student was

asked to select a novel of their choice for reading. This was to be used instead of the basal. The students were told that they would be asked to read this novel and to keep a reading log. The reading log was to include the story elements of the novel and any reaction that they wanted to record. They were to record each day that they read. Students generally read a chapter a day. Students were asked to choose a partner and to share their books. This was done approximately every other day. Since students selected their own partners, partners may have varied from meeting to meeting. When books were completed, students did book projects to share their books with the class. These projects included book advertisements, reading aloud favorite parts, illustrating sections, and many others.

Students were then asked to choose another book to read. Some students chose to work together reading multiple copies of the same book; while others chose to read individual copies. All decisions as to book selections were student made. Students were asked to keep an individual log and to record anything that they wanted to record. Students were asked to record every day and were asked to share their books and reading logs with a friend as frequently as they wanted to. At the end of the novel, each student completed a book project of their choice.

It was now felt that the students had adequate exposure to novels and were ready to begin the training portion of the experimental instruction. Students seemed to enjoy reading the novels and recording thoughts in their reading logs. Reading novels had become a natural part of their reading curriculum.

In the control group, the students were primarily using the sixth grade basal series. The teacher supplemented this with the literature basal series adopted by the school district. Instruction was usually total group with the students reading the story and answering the questions at the end of each story.

Experimental Instruction

Day One: In large group discussion, the class discussed ways to answer questions. It was discussed that the students were going to learn a strategy to help them identify the sources of answers to questions. The term QAR was put on the board. On the board it was written that Q stands for question. The term "question" was discussed. Added to the boad was that A stands for answer. The class discussed what the term "answer" means. Students were asked to predict what the R stood for. Then the word relationship(s) was written on the board. This term was discussed.

Students were told that in answering questions there are two places to search, in the book or text and in your head. Prior knowledge was discussed and the importance of what one knows and how he/she brings that knowledge to everything that he/she does. Examples were discussed based on books they had read individually and on books the teacher had read aloud to the total group. Students were each given a handout on QARs. It showed and explained the categories and sub-categories of In the Book and In My Head. Each category was discussed and examples reviewed for books read either individually or books read to the class by teacher. After the class had an understanding of the QARs terminology, each student made a reading log.

Each student was given a copy of the book <u>On My Honor</u> and was asked to look at the front cover of the book and make a prediciton about what the book might be about. These predictions were written on the first page of each student's reading log and then shared with the group after all had finished writing. Next, the title of the book was discussed along with what the students thought the term "honor" meant. They were asked to record their predicted definition in their reading log.

Day one's assignment was to read chapter one and record in the logs feelings or thoughts about what was read. They

were also given eight questions to answer and to identify the QAR category of each question.

Day Two: Chapter one was discussed. Each student and the teacher shared their feelings from the reading log. Each of the eight questions was discussed as to the appropriate answer and category label. Each question's characteristics was explained as to the criteria it met for each category in which it was placed.

A review of the QARs terms was discussed orally with the teacher asking for definitions of categories and for a rationale for the label given. Day two's assignment was to read chapter two, record feelings or thoughts about what was read and to answer and identify the QARs category for each of the eight questions for chapter two.

Day Three: Same procedure as for day two. Last day of training period.

Day Four: Maintenance period begins. Students and teacher met in small groups to discuss previous day's reading and questions. Each question was discussed and carefully examined as to its category. Students were encouraged to compare results and discuss their reasonings for labeling. Reasonings were supported with examples from the text if applicable. Day four's assignment had two

questions to answer and identify. This was to maintain their knowledge for identification of the QARs categories.

Day Five, Day Six, and Day Seven: Same procedure as day four. These assignments included three questions to answer and identify.

Day Eight: Same procedure as previous days with the exception that students wrote four questions, one for each category.

Day Nine: Same procedure as day eight. Student developed questions were shared in small groups to see if other members of group agree on category label. Assignment was to write four questions, one for each category.

Day Ten: Questions made for previous day were exchanged with a friend. Each answered the other's paper and discussed categories and answers. Same assignment as day nine.

Day Eleven: Same procedure as day ten. However, the assignment was to read chapters eleven and twelve and write four questions, one for each category, for both chapters.

Day Twelve: Discussed book as a total group. Students switched questions with a friend and answered and labeled categories. Reading logs were turned in.

Day Thirteen: Each student received a copy of chapter one from Nobody's Fault. After reading the chapter,

students answered eight questions. Students were instructed to answer each question as completely as possible. Students in the control group were given the same materials and asked to answer the eight questions. Time was allotted so that all students finished during class time. All students took the test at the same time and in the school cafeteria. The control group was sent back to their classroom and asked how many times they each had looked back to the text for help. The treatment group stayed in the cafeteria and were asked to label each question as to its question category. Afterwards, they were asked how many times they had looked back to the text for assistance in answering questions.

CHAPTER FOUR

RESULTS

The purpose of this chapter is to discuss the results of the comprehension tests, the analysis of the QARs categories, examine students' use of text, and compare the number of four point responses of both groups in each QARs category. Results indicate a slightly higher comprehension score for the treatment group than for the control group indicating the possible benefit of students knowing the QAR strategy.

Comprehension Test Results

Results show that students who received the QARs instruction, for the most part, did have a higher total score than students who did not have the treatment. Students in the treatment group averaged a two point higher score than students in the control group. The mean for the treament group was 27.31 and the mean for the control group was 25.67. The standard deviation for the treatment group was 3.89 and the standard deviation for the control group was 4.13. The t Test analysis showed $p < 0.1$. The total number of students was 24. The range of scores for the control group was 31 to 15. The range for the treatment group was 31 to 19.

Analysis of QAR Categories

After the control group had gone back to their classroom, the treatment group was asked to identify each question as to its QARs category. These were then analyzed to see how students actually categorized the questions.

When looking at the percent of correctly identified QARs categories labeled by the treatment group, 84% of the students had identified 75 to 100% of the labels correctly. Of these students, 40% had a perfect score, 32% had identified 7 of the eight, and 12% had correctly labeled 6 out of eight. The other 16% of the treatment group identified less than 63% correct. Of these students, 12% identified 5 correctly and 4% labeled only half of the questions correctly. The students who scored the lowest in identifying QAR categories were the students who had previously been identified as students with learning disabilities.

For question 1, 96% (23) correctly identified this as an On My Own question. Four percent (1) identified this as a Right There question.

For question 2, 96% (23) correctly identified this as a Right There question. Four percent (1) labeled it a Think and Search.

For question 3, 68% (16) correctly identified this as a Author and You. Eight percent (2) labeled it On My Own, four percent (1) labeled it Right There and, twenty percent (5) labeled it Think and Search.

For question 4, 96% (23) correctly identified as either Think and Search (11) or Right There (12). This question could have been labeled either way depending on where your answer was taken from in the text. When this question was developed this was not noticed. It was only noticed after the post-test that there were two possible answers. Therefore, either labeling was marked as correct. Four percent (1) labeled this an Author and You question.

For question 5, 76% (18) correctly identified this as a Right There question. Sixteen percent (4) labeled this as a Think and Search question; while eight percent (2) labeled this as Author and You.

For question 6, 72% (17) correctly labeled this as a Think and Search question. Sixteen percent (4) labeled this as a Right There question and twelve percent (3) labeled this as an Author and You question.

For question 7, 92% (22) correctly identified this as a Author and You question. Eight percent (2) labeled this a Think and Search question.

For question 8, 96% (23) correctly identified this as an On My Own question. Four percent (1) labeled this a Right There question.

Students were able to identify On Your Own questions with the most success. Of all On Your Own questions, pupils identified 96% correctly. It would seem that students have the ability to identify the key words which make it an On Your Own type question. Right There were the next most correctly labeled category with 86% identified. There were 84% Think and Search questions and 80% of the Author and You questions labeled accurately.

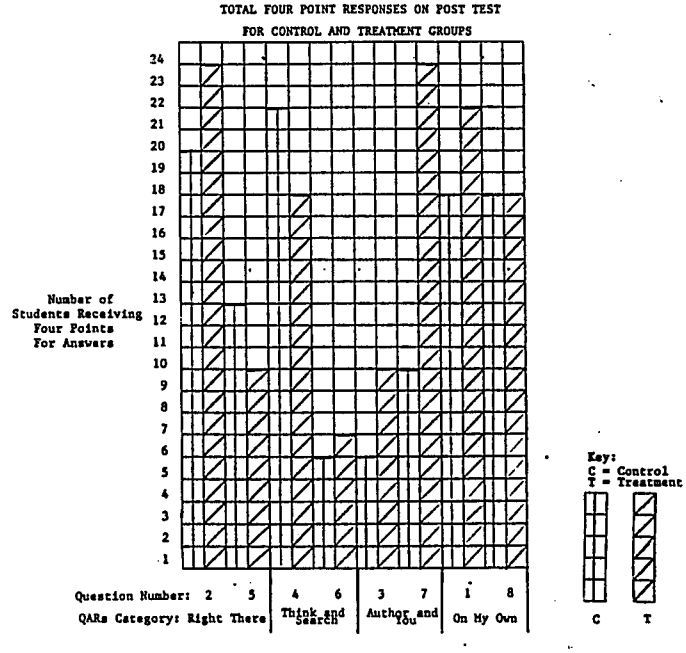
Students Use of Text

Students were asked to recall how many times they referred back to the text for assistance to answer questions. For the treatment group, 17% looked back to the text once, 58% looked back two to five times, 4% used the text five to eight times, and 21% did not use the text at all. For the control group, 50% looked to the text once, 25% used the text two to five times, and 25% did not use the text at all.

Comparison of the Number of Four Point Responses of Control and Treatment Groups in Each QARs Category

The following graph shows the total number of students per group and per question that received a perfect score of

four for their responses on the post test. On Right There and Think and Search questions, students in both groups performed approximately the same. This result may be due to the similar amount of past experiences these students have had with these types of questions. On Author and You questions, the treatment group exceeded the control group in both questions. Since students in the treatment group have had more experience using inferential thinking, they can integrate what they have read with what they know and respond with more complete answers. There is also an increased number of students in the treatment group receiving perfect scores for On My Own type questions. Again, these students were able to support their responses with more clarity than those in the control group.



CHAPTER FIVE

CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

The purpose of this chapter is to restate the hypotheses, design, procedures, and to discuss conclusions based on the results, the implications of this project fpr both students and teachers, and to make recommendations for future research.

Restatement of Hypotheses, Design, and Procedures

The purpose of the study was to assess the effects of QAR (Question Answer Relationships) strategy on sixth grade students using a literature program. QARs is a strategy designed to help students better answer teacher and text questions by being able to categorize questions. The assumption is that if students can identify the type of question, they can better answer the question.

Studies investigated showed that students who had prior training were better able to answer questions. Thus, it was hypothesized that students with QAR training would have a higher comprehension test score than those in the control group.

There were twenty-four students who participated in the treatment group. There were twenty-four students in the control group. These groups were already established sixth grade classrooms.

Two literature novels were selected to be used in this research project. On My Honor was used for the training and maintenance portion of the research. The first chapter of Nobody's Fault was utilized as the post-test. To teach the subjects about QARs, eight questions were developed for the first three chapters of On My Honor and for the first chapter of Nobody's Fault. Each set of questions included two questions from each category. Two to three questions were developed for chapters four through seven of On My Honor, with an equivalent number from each category distributed among all questions. This format was used so that students would have equal practice in both identifying and answering all question types. Chapters eight through twelve did not have questions developed because the students participating in the study developed questions to develop and show understanding of the QAR categories. Thus, the students had practice constructing questions based on the QAR categories.

Conclusions

Students who had the QAR instruction scored slightly higher on the comprehension test questions than the students in the control group. The data shows that the treatment group was able to classify using the QAR categories. Students who identified QAR categories responded more

completely to the questions. Also the treatment group used the text more frequently than those who did not have the training.

Implications

Based on this study, there are several implications for students use. The first implication is that comprehension was increased when students were taught the QAR strategy. The results showed that the treatment group had greater detail in their responses and supported their responses with examples from the text more frequently than those without the treatment. Also, students were asked if they had looked back in the text to help answer the questions. Most students in the treatment group looked back two to five times while students in the control group looked back into the text once. The teaching of QARs can therefore assist students in using the text to aide their understanding. A third implication is that students who had the QARs training were able to use it in making up their own questions. This is beneficial to students in that they use their background knowledge to combine with the text and can then write better questions.

For classroom use, teachers who develop questions using the QARs category system will be more able to ensure that students are using a variety of thinking processes, as well

as, making use of the students' prior knowledge. Teachers will also be able to better connect the text with the students' prior knowledge.

Suggested Changes for Future Replication

In a future replication of this study, the reading post test material should be richer and have more substance. This is suggested because if the text is not particularly challenging for any one in the group, then comprehension will be high for all students. This is believed to be a problem in the current study. It seems that all students, both in the control group and the treatment group, had little difficulty in comprehending the text. Therefore, there was little room for variance on the total points scored. A second change in a future study might be to have the students read more than one chapter and to have them respond to more questions. A third suggestion would be to allow for a longer preperation time for less fluent or able readers. This would ensure that all students fully understood the QARs categories.

Another suggestion is to randomly select students for the study. These students were not randomly selected from a larger sample. It also appears that based on ITBS scores these students are not randomly assigned into classrooms.

The treatment group has more students with lower ITBS scores than did the control group.

Researchers may also want to study student generation of questions during instruction time. If students can understand how to write questions for others it will benefit their reading and understanding of questions.

TABLE 1

BLOOM'S TAXONOMY OF EDUCATIONAL OBJECTIVES:
COGNITIVE DOMAIN (Hyman, 1976)

KNOWLEDGE
-Knowledge of Specifics
-Knowledhge of Ways and Means Dealing with Specifics
-Knowledge of the Universals and Abstractions in a Field

COMPREHENSION
-Translation
-Interpretation
-Extrapolation

APPLICATION

ANALYSIS
-Analysis of Elements
-Analysis of Relationships
-Analysis of Organizational Principles

SYNTHESIS
-Production of the Unique Communication
-Production of a Plan, or Proposed Set of Operations
-Derivation of a Set of Abstract Relations

EVALUATION
-Judgments in Terms of Internal Evidence
-Judgments in Terms of External Criteria

CATEGORIES DEFINED:

KNOWLEDGE: involves the recall of specifics and universals, the recall of methods and processes, or the recall of a pattern, structure, or setting.
-Knowledge of Specifics: involves the recall of specific and isolable bits of information, knowledge of terminology, and knowledge of specific facts.

-Knowledge of Ways and Means of Dealing with Specifics: has the following categories:
    Knowledge of conventions
    Knowledge of trends and sequences
    Knowledge of classification and categories
    Knowledge of criteria
    Knowledge of methodology.
-Knowledge of Universals and Abstractions in a Field: has the following categories:
    Knowledge of principles and generalizations
    Knowledge of theories and structures

COMPREHENSION: This cognitive level refers to a type of understanding or apprehension which implies that the individual knows what is being communicated and can make use of the material or idea being communicated without necessarily relating it to other material or seeing its fullest implications.
-Translation: Comprehension as evidenced by the care and accuracy with which the communication is paraphrased or rendered from one language or communication to another.
-Interpretation: The explanation or summarization of a communication.
-Extrapolation: The extension of trends or tendencies beyond the given data to determine implications, consequences, corollaries, effects, etc., which are in accordance with the conditions described in the original communication.

APPLICATION: This is the use of abstractions in particular and concrete situations. The abstractions may be in the form of general ideas, rules of procedure, or generalized methods.

ANALYSIS: is the breakdown of a communication into its constituent elements or parts.
-Analysis of Elements: Identification of the elements included in a communication.
-Analysis of Relationships: The connections and interactions between elements and parts of a communication.
-Analysis of Organizational Principles: THe organization, systematic arrangement, and structure which hold the communication together.

SYNTHESIS: Is the putting together of elements and parts to form a whole.
-Production of a Unique Communication: The development of a communication in which the writer or speaker attempts to convey ideas, feelings, and/or experiences to others.
-Production of a Plan, or Proposed Set of Operations: The development of a plan or the proposal of a plan of operations.

-Derivation of a Set of Abstraction Relations: The development of a set of abstract relations either to classify or explain particular data or phenomena; or the deduction of propositions and relations from a set of basic propositions or symbolic representations.

EVALUATION: Calls for making judgments about the value of material and methods for given purposes.
-Judgments in Terms of Internal Evidence: Evaluation of the accuraccy of a communication from such evidence as logical accuracy, consistency, and other internal criteria.
-Judgments in Terms of External Criteria: Evaluation of material with reference to selected or remembered criteria.

TABLE 2

SANDERS' TAXONOMY (Sanders, 1966)

1. MEMORY: The student recalls or recognizes information.

2. TRANSLATION: The student changes information into a different symbolic form or language.

3. INTERPRETATION: The student discovers relationships among facts, generalizations, definitions, values, and skills.

4. APPLICATION: The student solves a lifelike problem that requires the identification of the issue and the selection and use of appropriate generalizations and skills.

5. ANALYSIS: The student solves a problem in light of conscious knowledge of the parts and forms of thinking.

6. SYNTHESIS: The student solves a problem that requires original, creative thinking.

7. EVALUATION: The student makes a judgment of good or bad, right or wrong, according to standarads s/he designates.

TABLE 3

KRATHWOHL'S TAXONOMY OF EDUCATIONAL OBJECTIVES: AFFECTIVE DOMAIN (Hunkins, 1976)

RECEIVING (ATTENDING)
-Awareness
-Willingness to Receive
-Controlled or Selected Attention

RESPONDING
-Acquiescence in Responding
-Willingness to Respond
-Satisfaction in Response

VALUING
-Acceptance of a Value
-Preference for a Value
-Commitment

ORGANIZATION
-Conceptualization of a Value
-Organization of a Value System

CHARACTERIZATION BY A VALUE OR VALUE COMPLEX
-Generalized Set
-Characterization

CATEGORIES DEFINED

RECEIVING (ATTENDING): At this level the learner is sensitized to the existence of certain phenomena and stimuli; he or she is made willing to receive or attend to them. This is the first and crucial step if the student is to be properly oriented to learn what the teacher has planned.
-Awareness: is almost a cognitive behavior. But unlike knowledge, the first level of the cognitive domain, the concern is not really with memory or the ability to recall, but that given the appropriate opportunity, the learner merely will be conscious of something and will attend to a situation, phenomenon, object, or stage of affairs.
-Willingness to Receive: centers on getting the individual willing to notice a given stimulus, not to avoid it. Will he willingly react to data, situations presented in learning situations?

-Controlled or Selected Attention: is concerned with the differentation of a given stimulus into figure and ground at a conscious or perhaps semi-conscious level. This level is specifically asking the student to regulate his/her preception and "shut" out distracting stimuli.

RESPONDING: The concern at this level goes beyond merely attending to the phenomenon. At this stage, the teacher desires the child to become involved sufficiently in his work so that s/he will continue it minus guidance and formal structure.
-Acquiescence in Responding: At this stage the teacher wants students to comply with a particular situation. This suggests encouraging a certain degree of student passivity so far as the initiation of the behavior is concerned. Compliance might be a better term, for there is more of the element of reaction to a suggestion and less of the implication of resistance or yielding unwillingly.
-Willingness to Respond: The capacity for voluntary activity is the key here. There is the implication that the learner is sufficiently committed to exhibiting the behavior not just because of a fear of punishment, but "on his own" or voluntarily.
-Satisfaction in Response: This third stage gets at the feeling the student attains from responding to a question, a situation, or some type of material. It refers to reaction that causes a feeling of satisfaction, an emotional response, generally of pleasure or enjoyment.

VALUING: This third level refers to a thing, phenomenon, or behavior that has worth. The main thrust here is to get the individual to value so that his or her resulting behavior is sufficiently consistent and stable to have the characteristics of a belief or attitude.

An important aspect of behavior characterized by valuing is that it is motivated not by the desire to comply or obey, but by the individual's commitment to the underlying value.
-Acceptance of a Value: At this level, we are concerned with ascribing worth to a phenomenon, behavior, object, etc. The term "belief" adequately describes what may be thought of as the dominant characteristic here.

One of the distinguishing characeristics of this behavior is consistency of response to the class of objectives, phenomena, etc., with which the belief or attitude is identified.
-Preference for a Value: Behavior at this level implies not just the acceptance of a value to the point of being willing

to be identified with it, but that the individual is sufficiently committed to the value to pursue it, to seek it out, to desire it.
-Commitment: Belief at this level involves a high degree of surety; it suggests convivtion. In some instances it may border on faith, in the sense of it being a firm emotional acceptance of a belief upon admittedly nonrational grounds.
The person displaying such behavior is clearly perceived as possessing the value in that s/he acts to further the thing valued in some way, to extend the possibility of his developing it, and to deepen his involvement with it and with the things representing it. He attempts to convince others and to convert them to his cause.

ORGANIZATION: As an individual successively internalizes values, s/he encounters situations in which s/he must (a) organize the values into a system, (b) determine the interrelationship among them, and (c) establish the dominant and pervasive ones. Such a system is built gradually, subject to adjustment as new values are incorporated.
-Conceptualization of a Value: This first subcategory allows the individual to create an abstraction or abstractions relating to the values s/he possesses. Here the individual functions at the level of conceptualization. S/He is attempting to clarify values identified and found useful into some manageable system.
-Organization of a Value System: Objectives properly classified her are those which require the learner to synthesize a complex of values, possibly disparate ones, and to organize them into an ordered relationship with one another. Here the student is attempting to take identified values and incorporate them into a system for regulating further reactions and actions.

CHARACTERIZATION BY A VALUE OR VALUE COMPLEX: At this level of internalization the values already exist in the individual's value hierarchy and they are organized into some kind of internally consistent system. The individual already has utilized values to regulate his/her behavior, and s/he functions quite calmly with these values unless his/her values are challenged or s/ he is threatened for his/her views.
-Generalized Set: This level gives an internal consistency to the system of attitudes and values that the individual has synthesized. It enables the person to respond selectively at a very high level. It is sometimes spoken of as a determining tendency, an orientation toward phenomena,

or a predisposition to act in a certain way. The generalized set may be considered closely related to the idea of an attitude cluster, where the commanality is based on behavioral characteristics rather than the subject or object of the attitude. A generalized set also allows the individual to simplify and order the complex world and to act consistently and effectively in it.
-Characterization: This final level is the zenith of the internalization process and includes broad objectives relating to the phenomena covered and to the range of behavior comprised. Here we find those objectives which concern a person's view of the universe or philosophy of life. The objectives at this level are so encompassing that they tend to characterize the individual completely.

TABLE 4

TABA'S THREE COGNITIVE TASKS (Taba, 1966)

Cognitive Task 1: Concept Formation

OVERT ACTIVITY	COVERT MENTAL OPERATIONS	ELICITING QUESTIONS
1. Enumeration and listing	Differentiation	What did you see? hear? note?
2. Grouping	Identifying common properties	What belongs together? On what criteria?
3. Labeling, categorizing	Determining the hierarchical order of items. Super- and sub-ordination	What would you call these groups? What belongs under what?

Cognitive Task 2: Inferring and Generalizing

OVERT ACTIVITY	COVERT MENTAL OPERATIONS	ELICITING QUESTIONS
1. Identifying	Differentiating, distinguishing relevant information from irrelevant	What did you note? see? find?
2. Explaining	Relating points to each other; establishing cause and effect relationships	Why did so-and-so happen? Why is so-and-so true?
3. Making inferences or generalizations	Going beyond what is given; finding implications, extrapolations	What does this mean? What do you conclude? What generalizations can you make?

Cognitive Task 3: Application of Principles

OVERT ACTIVITY	COVERT MENTAL OPERATIONS	ELICITING QUESTIONS
1. Predicting consequences, explaining unfamiliar phenomena, hypothesizing	Analyzing the nature and the dimensions of the problem or condition	What would happen if ...?
2. Explaining and supporting the predicitions and hypothesis	Determining the causal links leading to a prediciton or hypothesis	Why do you think this would happen?
3. Verifying the predictions and hypothesises	Using logical reasonings to determine the necessary conditions and the degree of universality of the prediction or hypothesis	What would it take for so-and -so to be true? Would it be true in all cases? At what times?

TABLE 5

HYMAN'S FOUR CATEGORY SYSTEM (Hyman, 1979)

DEFINITIONAL: Questions in this category ask you to define a word, term, or phrase. In responding to a definitional question you give descriptive characteristics, or a label, or a specific instance of the word as you give its meaning.

EMPIRICAL: Questions in this category ask you to give responses based on your sense perceptions of the world. They ask for facts, comparisons and contrasts among facts, explanations of events, conclusions based on facts, or inferences which go beyond the facts on hand.

EVALUATIVE: Questions in this category ask you to give responses that state your own personal value judgments. Value judgments praise, blame, commend, criticize, or rate something. They deal with attitudes, feelings, morals, personal beliefs, and policies. Questions which request you to state or interpret someone else's empirical statements or value judgments are not categorized as evaluative because you do not give your own personal value judgment.

METAPHYSICAL: Questions in this category ask you to give responses that state your metaphysical or theological beliefs. Such questions deal in some way or other with God or the after-life.

TABLE 6

GUSZAK'S READING COMPREHENSION QUESTION-RESPONSE INVENTORY
(Guszak, 1967)

RECOGNITION: These questions call upon the students to utilize their literal comprehension skills in the task of locating information from reading context.

RECALL: Recall questions, like recognition questions, concern literal comprehension. The recall question calls upon the student to demonstrate his/her comprehension by recalling factual material previously read. Generally, such activity is primarily concerned with the retrieval of small pieces of factual information, but the sizes of the pieces may vary greatly.

TRANSLATION: Translation questions require the student to render an objective, part-for-part rendering of a communication. As such, the behavior is characterized by literal understanding in that the translator does not have to discover intricate relationships, implications, or subtle meanings. Translation frequently calls upon students to change words, ideas, and pictures into different symbolic form.

CONJECTURE: These questions call for a "cognitive leap" on the part of the students as to what will happen or what might happen. As such, the conjecture is an anticipatory thought and not a rationale.

EXPLANATION: Explanation questions, like conjeccture questions, are inferential in nature. However, the inference involved in the explanation situation calls upon the student to supply a rationale. The rationale must be inferred by the student from context developed or go beyond it if the situation is data-poor in terms of providing a rationale.

EVALUATION: Evaluation questions deal with matters of value rather than matters of fact or inference and are thus characterized by their judgmental quality (worth, acceptability, probability, etc.).

TABLE 7

GALLAGHER AND ASCHNER'S FIVE CATEGORY SYSTEM
(Gallagher & Aschner, 1966)

COGNITIVE-MEMORY OPERATIONS: represent the simple reproduction of facts, formulae, or other items of remembered through use of such processes as recognition, rote memory, and selective recall.

CONVERGENT THINKING: represents the anaylsis and integration of given or remembered data. It leads to one expected end-result or answer because of the tightly structured framework through which the individual must respond.

DIVERGENT THINKING: represents intellectual operations wherein the individual is free to generate independently his own data within a data-poor situation, or to take a new direction or perspective on a given topic.

EVALUATIVE THINKING: deals with matters of judgment, value, and choice and is characterized by its judgmental quality.

ROUTINE: contains a large number of miscellaneous classroom activities. Included here are the dimensions of praise and censure of others and of self. Also present are dimensions of structuring, a kind of prefatory remark, telling in advance what the speaker intends to say or do, or what s/he expects someone else to say or do. Other characteristic occurences, such as humor, as well as the ordinary, "routine" classroom management behaviors, even requests to close the door or asking what time it is, are included in this primary category.

TABLE 8

LEHNERT'S QUALM COMPUTER PRINCIPLES OF UNDERSTANDING QUESTIONS AND CONCEPTUAL QUESTION CATEGORIES
(Lehnert, 1978)

PRINCIPLES of UNDERSTANDING QUESTIONS:

1. The memory processes of question answering are independent of language
2. Questions are understood are many different levels
3. Understanding questions requires conceptual categorization
   (Note: thirteen conceptual question catagories are sub-categories)
4. Context affects conceptual categorization
5. Rules of conversational continuity are needed to understand some questions
6. A good answer is more than a correct answer: Appropriateness also counts
7. Shifts in interpretive focus alter meaning
8. Focus directs attention to variations on expectations
9. Ambiguity of focus rarely occurs in context
10. The more inferences an answer carries, the better the answer
11. A difficult retrieval problem may point to weaknesses in the memory representation
12. Good answers can involve knowledge-state assessment
13. The same question does not always get the same answer
14. Sometimes inferences must be made at the time of question answering
15. You can't always expect to find exactly what you had in mind
16. A good search strategy knows when it has the answer: Smart heuristics know when to quit

CONCEPTUAL QUESTION CATEGORIES:

1. Causal Antecedent
2. Goal Orientation
3. Enablement
4. Causal Consequent
5. Verification
6. Disjunctive
7. Instrumental/Procedural
8. Concept Completion
9. Expectational
10. Judgmental
11. Quantification
12. Feature Specification
13. Request

TABLE 9

PEARSON AND JOHNSON'S QUESTION TAXONOMY
(Pearson & Johnson, 1978)

TEXTUALLY EXPLICIT QUESTIONS: have obvious answers right there on the page. Some would call them factual recall questions.

TEXTUALLY IMPLICIT QUESTIONS: have answers that are there on the page, but the answers are not so obvious.

"SCRIPTUALLY" IMPLICIT QUESTIONS: a reader needs to use his or her own script in order to come up with an answer

TABLE 10

ILLUSTRATIONS TO EXPLAIN QARS TO STUDENTS (Raphael, 1986)

In the Book QARs

RIGHT THERE: The answer is in the text, usually easy to find. The words used to make up the question and words used to answer the question are RIGHT THERE in the same sentence.

THINK AND SEARCH (PUTTING IT TOGETHER): The answer is in the story, but you need to put together different story parts to find it. Words for the question and words for the answer are not found in the same sentence. They come from different parts of the text.

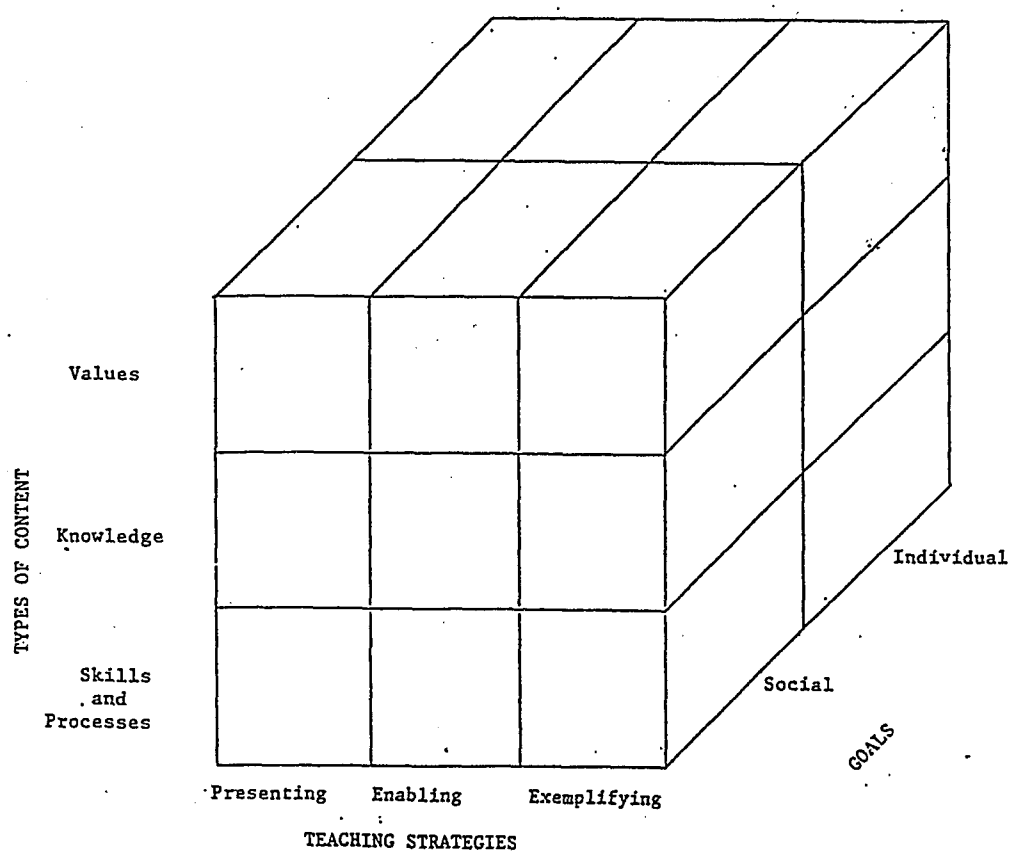
In My Head QARs

AUTHOR AND YOU: The answer is not in the story. You need to think about what you already know, what the author tells you in the text, and how it fits together.

ON MY OWN: The answer is not in the story. You can even answer the question without reading the story. You need to use your own experience.

TABLE 11

HYMAN'S INTERRELATIONSHIP BETWEEN TEACHING STRATEGIES, GOALS, AND TYPES OF CONTENT (Hyman, 1979)



APPENDIX A: TRAINING QUESTIONS: CHAPTERS ONE THROUGH THREE

STUDENT NAME:_____

On My Honor by Marion Dane Bauer
Training Questions

Use these abbreviations when matching your answer to the categories and write your answer next to the category name abbreviation that the question asks:

Right There = R
Think and Search = T
Author and You = A
On My Own = O

Answer each set of chapter questions after you have read each chapter. You may use the book to help answer the questions.

Chapter One:

1. What brand of battered bike did Tony have?

   R:_____

   T:_____

   A:_____

   O:_____

2. What were some of the stated reasons Joel didn't want to go to the park?

   R:_____

   T:_____

   A:_____

   O:_____

3. Why do you think Tony and Joel are friends? Explain with support from the text.

R:_____

T:_____

A:_____

O:_____

4. What job is Joel supposed to do in the afternoon?

R:_____

T:_____

A:_____

O:_____

5. Would you go some place with a friend if you knew it would be dangerous? Explain.

R:_____

T:_____

A:_____

O:_____

6. Do you think Tony and Joel have a good friendship? What makes you think this?

R:_____

T:_____

A:_____

O:_____

7. List some things that Joel's dad said that showed he was concerned about their trip.

R:_____

T:_____

A:_____

O:_____

8. Has a friend ever persuaded you to do something? Explain.

R:_____

T:_____

A:_____

O:_____

CHAPTER TWO:

1. Compare Tony's and Joel's bikes.

R:_____

T:_____

A:_____

O:_____

2. As Joel reached the bottom of the hill, he knew exactly how the river looked. How did he describe it?

R:_____

T:_____

A:_____

O:_____

3. What is the name of the river?

R:_____

T:_____

A:_____

O:_____

4. What did Tony do that showed he was excited about going to the bluffs?

R:_____

T:_____

A:_____

O:_____

5. What do you think Joel could have said to get out of going with Tony?

R:_____

T:_____

A:_____

O:_____

6. Would you want Tony for a friend? Explain.

R:_____

T:_____

A:_____

O:_____

7. Have you ever swam in a place other than a pool? Describe it.

R:_____

T:_____

A:_____

O:_____

8. What qualities are important in a friend? List them.

R:_____

T:_____

A:_____

O:_____

CHAPTER THREE:

1. Have you ever said something mean about a friend's parent? Explain.

R:_____

T:_____

A:_____

O:_____

2. In what way(s) did Joel compare/contrast the river to a pool?

R:_____

T:_____

A:_____

O:_____

3. Why does Joel feel it's disloyal to think that Tony can't swim?

R:_____

T:_____

A:_____

O:_____

4. How would you react if someone made fun of your mother or father?

R:_____

T:_____

A:_____

O:_____

5. What type of team did Tony want to be on in Jr. High?

R:_____

T:_____

A:_____

O:_____

6. Why was Joel sorry for saying, "At least my dad doesn't go around hitting kids with a belt."

   R:_____

   T:_____

   A:_____

   O:_____

7. What clues does the author give you to show that Tony was a poor swimmer?

   R:_____

   T:_____

   A:_____

   O:_____

8. How did Joel swim when he eased himself deeper into the water?

   R:_____

   T:_____

   A:_____

   O:_____

APPENDIX B: MAINTENANCE QUESTIONS
CHAPTERS FOUR THROUGH SEVEN

Name:_____

MAINTENANCE QUESTIONS

Chapter Four

1. How do you think Joel felt when he realised Tony had gone under in the current?

   R:_____

   T:_____

   A:_____

   O:_____

2. What clues does the author give you that Tony can't swim very well?

   R:_____

   T:_____

   A:_____

   O:_____

Name:_____

MAINTENANCE QUESTIONS

Chapter Five

1. How many times did Joel dive in the river to look for Tony?

   R:_____

   T:_____

   A:_____

   O:_____

2. When Joel is riding home the author describes the river and how Joel feels. What is meant when the author states, "He could feel the river behind him, a presence, a lurking monster ready to pounce"?

   R:_____

   T:_____

   A:_____

   O:_____

3. What are some things you can do if you see someone drowning?

   R:_____

   T:_____

   A:_____

   O:_____

Name:_____

MAINTENANCE QUESTIONS

Chapter Six

1. List the things that Joel did to stop the car.

   R:_____

   T:_____

   A:_____

   O:_____

2. How many minutes did the boy say it took to drown?

   R:_____

   T:_____

   A:_____

   O:_____

3. What had Joel thought he had proven his honor to be worth? Explain.

   R:_____

   T:_____

   A:_____

   O:_____

Name:_____

MAINTENANCE QUESTIONS

Chapter Seven

1. Can you think of a situation where it might be better to tell a lie than to tell the truth? Explain why or why not.

   R:_____

   T:_____

   A:_____

   O:_____

2. Why did Joel turn his face away when the red car passed by him?

   R:_____

   T:_____

   A:_____

   O:_____

3. Why does Joel go back to the river bank?

   R:_____

   T:_____

   A:_____

   O:_____

APPENDIX C: POST TEST

STUDENT NAME: _____
TEACHER: _____

Nobody's Fault by Patricia Hermes
Post Test

Please answer these questions after reading Chapter One. You may use the book when answering the questions.

1. Is there something you'd like to be better at doing? Explain.

2. What did Emily want to be the first woman to be in?

3. Do you think Monse and Emily love each other? Explain with reasons supported by the text.

4. What was Emily afraid of?

5. What did Emily want to put in the secret box?

6. What were the sequence of events that lead Emily to hurt her nose?

7. Is Monse mean? Explain why you think so.

8. Have you ever teased someone? Explain.

APPENDIX D: CATEGORIZING OF QUESTION TYPES

TRAINING QUESTIONS:

Chapter One:
1. Right There
2. Think and Search
3. Author and You
4. Right There
5. On My Own
6. Author and You
7. Think and Search
8. On My Own

Chapter Two:
1. Think and Search
2. Right There
3. Right There
4. Think and Search
5. Author and You
6. Author and You
7. On My Own
8. On My Own

Chapter Three:
1. On My Own
2. Think and Search
3. Author and You
4. On My Own
5. Right There
6. Author and You
7. Think and Search
8. Right There

MAINTENANCE QUESTIONS:

Chapter Four:
1. Author and You
2. Th~~ink~~ and Search

Chapter Five:
1. Right There
2. Author and You
3. On My Own

Chapter Six:
1. Think and Search
2. Right There
3. Author and You

Chapter Seven:
1. On My Own
2. Author and You
3. Author and You

POST TEST QUESTIONS:

Chapter One:
1. On My Own
2. Right There
3. Author and You
4. Think and Search
5. Right There
6. Think and Search
7. Author and You
8. On My Own

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