To the Graduate Council:

I am submitting herewith a thesis written by Lee Ann Bellon entitled "A Study of Comparisons of Levels of Questions Used by Elementary Language Arts Teachers and High School English Teachers." I recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Science, with a major in Curriculum.

Carl Murphy
Carl Murphy, Major Professor

We have read this thesis and recommend its acceptance:

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Vice Chancellor
Graduate Studies and Research

A STUDY OF COMPARISONS OF LEVELS OF QUESTIONS USED BY ELEMENTARY LANGUAGE ARTS TEACHERS AND HIGH SCHOOL ENGLISH TEACHERS

A Thesis

Presented for the

Master of Science

Degree

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Lee Ann Bellon

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ABSTRACT

The purpose of the study was twofold:

1. To compare the levels of questions used by elementary language arts teachers and high school English teachers.

2. To determine if teachers' stated objectives were congruent with the levels of questions they asked.

The participants included five elementary language arts teachers and five high school English teachers selected from the Knoxville City School System. Each teacher was judged as competent by her principal.

Data were gathered from three observations of each teacher. Before each observation the teacher stated the objectives for that lesson. All observations lasted not less than twenty minutes, but not more than thirty minutes. Both a written record and a taped recording were made of questions asked during each observation.

All questions were categorized as being on the recall, process or application level. Questions asked on each level during one observation period were totaled and converted into percentages for each level. The percentage for each level of question used by elementary language arts teachers was compared with the percentage for each level of question used by high school English teachers.

For each lesson observed, the teacher's objectives were categorized as being on the recall, process or application level. Then the level of each objective was compared to the percentage of questions asked on that level during the observation.

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CHAPTER I

INTRODUCTION

I. BACKGROUND INFORMATION

For the last decade questioning practices in the classroom have been under close scrutiny. Educators have studied many aspects of the art of question asking. Most of the emphasis has focused on the teacher as question asker. According to Wease, one reason for this emphasis is that the teacher is often seen as a "professional question maker."[1]

Teachers at both the elementary and secondary levels have been studied to ascertain what kinds of questions they ask, how often they ask them, and what kind of response their questions elicit. Some researchers have even attempted to change teacher questioning patterns.

One reason for this interest in questioning techniques is that education in general has fallen under heavy attack recently. Concern over falling test scores has resulted in the "back to basics" movement and an outcry for teacher accountability. As a result, there has been a renewed

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[1]H. Wease, "Questioning: The Genesis of Teaching and Learning," The High School Journal, Vol. LIX, No. VI (March, 1976), p. 264.

interest in how teachers affect student learning. Questioning is one way that teachers affect the learning of their students. In fact, it is the belief of some educators that, "questioning is perhaps the central skill in the teaching-learning experience."[2]

Elementary language arts and secondary English classrooms are appropriate places to study teachers' questioning techniques. One important function of these content areas is to improve the student's communication skills. Thus, classrooms in these areas should provide fruitful laboratories for the study of teacher questioning techniques.

II. THE PROBLEM

Statement of the problem. The purpose of this study was to compare the questioning techniques of elementary language arts teachers with those of secondary English teachers. More specifically, the study was undertaken to determine the frequency and level of questions used by teachers in each setting. The study also sought to determine if teachers' stated objectives were congruent with the levels of questions they asked.

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[2]Robert J. Nash and David A. Shimanan, "The English Teacher as Questioner," English Journal, Vol. LXIII, No. IX (December, 1974), p. 38.

Questions to be answered. This study was designed to answer the following questions:

1. Do elementary language arts and secondary English teachers ask recall, process, and application questions in their classrooms?

2. How frequently do teachers at each level ask recall, process, and application questions?

3. Do elementary language arts teachers ask recall, process, and application questions as frequently as secondary English teachers?

4. Are teachers' stated objectives congruent with the levels of questions they ask?

Importance of the study. Although questioning techniques have been thoroughly researched, there is still a need for additional study in some areas. In the past, the majority of the research has dealt with the types of questions teachers in a particular subject or grade level ask, and the frequency with which they ask them. There has been little if any attempt to discover if the grade level of the students affects the number of recall, process or application level questions the teacher asks.

Also, most previous studies have centered on questioning techniques in social studies or science classrooms. Although there have been several studies in the language arts and English areas, they are relatively scarce.

Moreover, it is possible that this study will show that teachers are not asking questions on all levels, and that teachers' questions are not congruent with their objectives. If this is the case, this study will point to the need for staff preservice and inservice training programs in the area of questioning techniques.

Therefore, the study was of considerable importance. First, it answered questions about the comparative levels and frequency of questions asked in the elementary versus the secondary classroom. Secondly, the study provided additional information about questioning in the fields of language arts and English. Finally, information was collected that could assist staff development.

Limitations of the study. The following limitations were observed in conducting the study:

1. The population of teachers used in the study was drawn from the language arts classes of Sterchi Elementary School and English classes at Central High School, in the Knoxville, Tennessee City School System.

2. No attempt was made in this study to account for differences in the curricula or among teachers' styles of instruction in the two schools.

3. Observations were limited to lecture and discussion class sessions.

4. Only cognitive level questions were charted.

Assumptions. In conducting this study three assumptions were made. First, it was assumed that questioning is a regularly used teaching strategy. Also, it was taken for granted that there are appropriate levels of questions for specific learning objectives. Finally, it was supposed that questioning techniques can be identified and charted within a specific time frame.

III. PROCEDURES

The participants and their selection. The participants in this study were selected from language arts teachers at Sterchi Elementary School and English teachers at Central High School, in the Knoxville City School System. The sample consisted of five language arts teachers and five English teachers. These teachers were all judged as competent by their principals.

Methods of gathering data. Each teacher was observed a total of three times. All observation periods lasted not less than twenty minutes, but not more than thirty minutes. Before each observation it was determined that the class would be of the lecture and discussion type. Also, before each observation the teacher determined the objectives for the lesson.

The observer tape recorded each lesson and kept a written record of all teacher questions. Two recording

methods were employed in order to allow for cross-checking of results.

Following the observation, the observer reviewed both the tape and the written record. Each teacher question was then charted according to categories derived from the Taba and Hunkins systems. The categories include:

1. Recall. This is the most basic level of questioning. Recall questions deal with rote memory, and the ability to remember facts. A sample recall question would be, "Who wrote Of Mice and Men?"

2. Process. A process question demands that the students do more than just remember the facts. Students must be able to analyze, compare, and define relationships between different sets of facts. This level of question can also call for a conclusion concerning why a result was reached or the cause of a particular effect. A sample process question would be, "What do Lennie and the mice he carries have in common?"

3. Application. Application questions require students to predict, forecast, or speculate about what effect a certain set of facts would have on a different situation. This level of questioning calls for creative thought, and leads to no "right" answers. A sample application question would be, "If Steinbeck were alive today, who would he say are the 'mice' in our society?"

The objectives stated by the teacher, prior to the observation, were also charted according to these categories.

Treatment of the data. After collecting the data from a total of thirty visits, the results were analyzed using the following procedure. The number of questions asked on each level during one observation period by the elementary language arts teachers were totaled. These figures were converted to a percentage for each level based on the total number of questions asked by language arts teachers. After a similar process was applied to secondary English teachers' questions, the percentages for each level were compared.

In addition, for each lesson observed, the teachers' objectives were categorized into one of the three levels. Then the level of each objective was compared to the percentage of questions asked on that level during that lesson.

IV. ORGANIZATION OF THE STUDY

This chapter has provided background information, the problem, procedures used in the study and the organization of the study. Chapter II presents a review of related literature. In Chapter III, the data are presented and analyzed and Chapter IV is devoted to summarizing the findings and discussing the conclusions that may be drawn from them.

CHAPTER II

REVIEW OF RELATED LITERATURE

Over the years educational researchers have shown an increasing interest in teacher questioning techniques. Researchers have focused on three aspects of the questioning process: the number of questions asked, the types of questions asked, and the effects of different types of questions on the students.

In addition, there has been some discussion as to how teachers' questioning skills were formed in the United States and how they evolved since their initiation. Goffe and Deane state that the questioning process in schools began to form in the seventeenth century. During this period, teachers and students worked mainly with the New England Primer. Both teacher questions and student answers were provided in this book. All students were expected to memorize the proper response to the proper question. By the 1840's, questioning practices had changed to some degree. While textbooks continued to provide teachers with questions, student answers were not supplied. However, the questions were often stated so that students were expected to answer in the words of the text. According to Goffe and Deane, although educators would like to believe that these kinds of questioning techniques

are relics of the past, not as much improvement has taken place as the educators would expect.[3]

In 1912 Stevens researched the number of questions teachers asked. She found that a sample of primary teachers asked approximately 348 questions per day, while a sample of high school teachers asked 395 questions in the same period. Stevens concluded that question and answer activities made up four-fifths of the school day.[4] Another study, conducted in 1940, discovered that teacher questions in a laboratory high school, "outnumbered pupil questions by eight to one."[5] The researcher thought it would be interesting to consider, "Why mature persons (presumably the teachers) have to ask immature persons (presumably the pupils) so many questions."[6]

More recent research proves that teachers continue to ask the overwhelming majority of classroom questions. However, in 1971 Sarason discovered that teachers underestimate the number of questions they ask. The elementary teachers he studied thought they asked between 12 and 20 questions per

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[3]L. C. Goffe and N. H. Deane, "Questioning our Questions," College Composition and Communication, Vol. XXV, No. IV (October, 1974), pp. 284-291.

[4]D. Meredith Gall, "The Use of Questions in Teaching," Review of Educational Research, Vol. XL, No. V (December, 1970), pp. 707-721.

[5]B. Hoskin and K. Swick, "Questioning and Learning," Clearing House, Vol. XLVII, No. IX (May, 1973), p. 567.

[6]Ibid., p. 567.

half hour, when they really asked between forty-five and one hundred and fifty questions during that amount of time.[7]

In addition, educational researchers have been interested in the types, or levels, of questions teachers ask. The 1912 study done by Stevens found that two-thirds of the questions teachers asked were fact-type questions, calling for recall-type responses. Coreys' 1940 study of high school teachers showed that the passage of time had not changed teacher questioning patterns to a great extent. He reported that 71 percent of the teachers asked factual questions while 29 percent asked questions on a higher cognitive level.[8]

Research has also been collected concerning questioning patterns in specific skill areas. Frank Guzak was interested in the interactions of the reading group. He studied students in the second, fourth, and sixth grades. His results showed that by far the largest percentage of questions asked were on the recall level. Higher level questions made up 13.7 percent of the teachers' questions.[9]

Researchers have also discovered that even when teachers are classified as the "best" in their respective academic

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[7]Robert J. Nash and David A. Shiman, "The English Teacher as Questioner," English Journal, Vol. LXIII, No. IX (December, 1974), pp. 38-44.

[8]Gall, op. cit., pp. 707-721.

[9]Frank J. Guzak, "Teacher Questioning and Reading," The Reading Teacher, Vol. XXI, No. III (December, 1967), pp. 227-234.

fields, or when their students are labeled as "gifted," low level questions still dominate the student teacher interaction. Floyds' 1960 study found that when teachers were classified as the "best" in their fields, 42 percent of their questions were factual. On the other hand, Gallagher found that teachers of "gifted" students asked factual type questions over 50 percent of the time.[10]

Zimmerman and Bergan addressed the question of whether the cultural makeup of schools had an effect on teacher questioning patterns. They conducted a study including four different school systems. The systems were from different areas of the country and had different cultural backgrounds. Zimmerman and Bergan found that factual knowledge questions were being stressed in all of the school systems. As a result of this practice, no matter where the schools were located, or what their sociocultural backgrounds were, higher level questions were asked infrequently. Zimmerman and Bergan concluded that many higher level intellectual operations, seen as vital by educators and psychologists, were not receiving adequate stimulation in the classroom.[11]

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[10]Gall, op. cit., pp. 707-721.

[11]Barry J. Zimmerman and John R. Bergan, "Intellectual Operations in Teacher Question Asking Behavior," Merrill-Palmer Quarterly of Behavior and Development, Vol. XVII, No. I (January, 1971), pp. 19-26.

Other researchers have also been concerned with how teachers' questioning patterns affect the students. Bartolome feels that teachers' questions have a great deal of influence on the students. According to him, because teachers control the verbal out-put in a class, they can either encourage or discourage student inquiry and response. "Teachers questions then, tend to structure the nature, content and mode of learning in the classroom."[12]

Both the number of questions teachers ask and the level of those questions can affect student involvement in the classroom. Although teachers need to provide enough guidance to help a discussion stay on point, care must be taken that the teachers' guidance does not shut the students out of the discussion. When a teacher talks excessively during a discussion, there is a minimum of student involvement.[13] In order to have effective discussion, the classroom must be one in which everyone listens to each speaker. This does not only mean the students listening to the teacher, but also the teacher listening to the students, and the students listening to other students.[14]

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[12]Paz I. Bartolome, "Teachers' Objectives and Questions in Primary Reading," Reading Teacher, Vol. XXIII, No. I (October, 1969), p. 27.

[13]Carole Masley Kirkton, "N.C.T.E./E.R.I.C. Summaries and Sources: Class Discussion and the Craft of Questioning," English Journal, Vol. LX, No. III (March, 1971), pp. 408-413.

[14]Francis P. Hunkins, Involving Students in Questioning (Boston: Allyn and Bacon, 1976), pp. 56-59.

It is the belief of some researchers that the type of question asked suggests the level of thinking on the students' part.[15] Cole and Williams conducted a study of how teachers' questions affected student responses. They found a direct correlation between levels of teachers' questions and levels of student responses.[16]

Taba and Freeman also believed that students' thought processes could be altered as a result of the teachers' questions. As a result of a study they conducted with elementary social studies students, they concluded that thinking is a skill that can be gained and improved through proper questioning techniques.[17]

On the other hand, not all educational research agrees on the effect the levels of teacher questions has on the levels of student thoughts. Hunkins conducted a study of both second grade and fifth grade elementary students. He found that the second grade students did achieve on a higher level when exposed to higher level questions. However,

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[15]Virginia M. Rogers, "Modifying Questioning Strategies of Teachers," Journal of Teacher Education, Vol. XXIII, No. I (Spring, 1972), pp. 58-62.

[16]Richard A. Cole and David M. Williams, "Pupil Responses to Teacher Questions: Cognitive Level, Length and Syntax," Educational Leadership, Vol. XXXI, No. II (November, 1973), pp. 142-145.

[17]Hilda Taba and Elzey Freeman, "Teaching Strategies and Thought Processes," Teachers College Record, Vol. LXVI, No. VI (March, 1964), pp. 525-534.

there did not seem to be a significant relationship between achievement level and question level with the fifth grade students. Ryan felt that there were some problems with Hunkins' research design. He conducted a separate study, this time including a control group. He randomly assigned fifth and sixth grade students to one of three groups: those exposed to high level questions, those exposed to low level questions, and a control group. Teachers were provided with lesson plans which included questions on the appropriate level. Following his study, Ryan concluded that, "high level questions are more efficient than low level questions for moving students toward low and high level understanding."[18]

It is important to note that simply asking an abundance of high level questions will not make a teacher an effective discussion leader. In fact, high level questions can be misused by teachers. Some teachers go to the extreme of asking only difficult questions. They believe that the only effective questioning strategy must include "tripping the student up." A teacher with this attitude will not only limit two-way communication, but will also miss the opportunity to build on the students' present knowledge.[19]

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[18]Frank L. Ryan, "Differentiated Effects of Levels of Questioning on Student Achievement," Journal of Experimental Education, Vol. XLI, No. III (Spring, 1973), p. 66.

[19]John B. Hough and James K. Duncan, Teaching: Description and Analysis (Addeson-Wesley Publishing Compnay, Reading, Mass., 1970), pp. 188-192.

In order to become an effective questioner the teacher must have a working knowledge of question levels and the kinds of responses they will elicit.[20] Teachers of all grade levels should be able to use all levels of questions. The only changes that should be made because of grade level include the degree of sophistication of the question, the amount of guidance required, the type of response expected, the amount of background information required, and who asks most of the questions. Hunkins believes that at the elementary level the teacher should ask most of the questions, turning question asking over to the students as they progress through the grade levels. The teacher should gradually teach the students how to make effective use of questions by introducing them to the different question levels.[21]

However, just having a working knowledge of question levels will not make a teacher an effective question asker. The level of a teachers' questions should relate directly to the objectives they wish to achieve. Bartolome undertook to study whether elementary reading teachers' levels of questions corresponded with their objectives. He found that most of their objectives were on the application and analysis levels, while their questions were primarily on the recall level.[22]

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[20]Kirkton, op. cit., pp. 408-413.

[21]Francis P. Hunkins, Questioning Strategies and Techniques (Boston: Allyn and Bacon, 1972), pp. 132-133.

[22]Bartolome, op. cit., pp. 27-33.

Some teachers complain that open-ended or application questions draw confused and closed responses. Hough and Duncan feel that this problem can be avoided. According to them,

> There is some indication that the teacher who has analyzed his objectives and knows whether he is seeking open or closed responses from students is better able to state his questions so that they elicit open or closed responses. The teacher needs to recognize, however, that different instructional purposes and objectives call for different kinds of questions . . .[23]

Sequence and timing are two additional aspects of an effective questioning pattern. Teachers should plan lessons to move students from one level to the next, as far as they are able to progress for each unit.[24] Taba and Freeman stated that poor questioning patterns exist because, "Classroom learning experiences are not usually designed to provide a cumulative sequence in the maturation of thought which is at once psychologically sound and logically valid."[25] They also believed that in order for students to solve problems in a rational and productive manner, teachers must provide them with ways to organize information. Through charting the flow of the classroom activities, Taba and Freeman discovered that

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[23]Hough and Duncan, op. cit., p. 191.

[24]C. R. Duke, "Questions Teachers Ask: By passes or Thruways?," Clearing House, Vol. XLV, No. VIII (April, 1971), pp. 468-469.

[25]Taba and Freeman, op. cit., p. 525.

the levels of questions had to be elevated gradually. If the teacher started out on a high level early in the class session, the students seemed to pull the discussion back to a lower level. The teacher needs to be sure the students have mastered one level of thought before moving on to another.[26]

In addition to knowledge of question levels, congruence with objectives and proper sequence and timing, the questions themselves must be "good questions." According to Sanders, a good question must, "assist, guide, and clarify."[27] He believes that all good questions should meet the following four criteria:

1. They focus on selected aspects or dimensions of meaning which when considered lend a sense of the whole.
2. They are clearly stated, leaving no uncertainty as to what the student must do.
3. They are stated objectively, and thus do not reveal the teachers' view.
4. They are presented in logical sequence, later questions, to a considerable extent, building upon the accomplishment of earlier ones.[28]

A great deal of planning is a requirement of any good questioning pattern. Although most questions are spontaneously posed during a class, Goeffe and Deane felt that,

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[26]Ibid., pp. 525-534.

[27]Peter Sanders, "When Teachers Tolk and Students (Sometimes) Listen," English Journal, Vol. LXIII, No. VIII (November, 1974), p. 80.

[28]Ibid., pp. 80-81.

> . . . to insure that major concepts are generated, critical points covered and desirable objectives realized effectively and efficiently, questions composed prior to the discussion session serve admirably.[29]

By preparing some questions in advance the teacher could insure that the lesson did not depend entirely on recall level questions.[30]

In order for teachers to improve their own questioning skills they must constantly try new uses of questions. They should also regularly look at the past lesson and see how a different use of questions could improve it. This is a process that never ends. An effective questioner must undergo constant self reexamination.[31]

Most educational researchers blame teachers' lack of questioning skills on poor training. Little emphasis is placed on questioning skills during education courses or in preservice and inservice training programs.[32]

Teachers' questioning skills can be affected through training programs. Ambrose Clegg gave six student teachers training in questioning skills, while a control group was given no training. He found that the group that received

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[29]Goffe and Deane, op. cit., p. 286.

[30]Ibid., pp. 284-291.

[31]Hunkins, Involving Students in Questioning, op. cit., pp. 56-59.

[32]Gall, op. cit., pp. 707-721.

the training asked more high level questions than the control group.[33]

Claudia Crump took a different approach to training teachers to use higher level questions. She conducted a study using programmed learning material on an independent study basis to improve the questioning skills of social studies teachers. She concluded that after participating in the self instruction programs teachers asked more higher cognitive level questions. The program was even more effective when followed up with teacher group discussions.[34]

However, Arnold found that even after teachers had been trained to ask questions on each of the levels, they still asked a majority of recall questions. In his study dealing with elementary teachers, his subjects found it difficult to ask many high level questions.[35] This study emphasizes the need for teacher training programs to be an ongoing process.[36]

The research conducted on teacher questioning skills has been effectively summarized by Zahorik. He concluded that:

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[33]Norris M. Sanders, "A Second Look at Classroom Questions," High School Journal, Vol. LV, No. VII (April, 1970), pp. 657-660.

[34]Claudia Crump, "Teachers Questions and Cognition," Educational Leadership, Vol. XXVII, No. VII (April, 1970), pp. 657-660.

[35]Daniel S. Arnold and others, "Questions and Response Levels and Lapse Time Interval," Journal of Experimental Education, Vol. XLIII, No. I (February, 1974), pp. 11-15.

[36]Norris M. Sanders, op. cit., pp. 265-277.

1. The increased interest in teacher questions generally has to do with the type or level of thinking the question requires on the part of the pupil.
2. In all subject areas at all grade levels teachers ask many low level questions and few high level questions.
3. Teachers ought to ask fewer low level questions and increase their use of high level questions.[37]

I. SUMMARY OF THE REVIEW OF RELATED LITERATURE

An attempt has been made in this chapter to review the literature pertaining to teacher questioning techniques. The trends in teacher questioning skills were reviewed from a historical perspective. Attention was also given to the number of questions teachers ask, the types of questions teachers ask and how teachers' questions affect the students. Finally, the components of proper questioning techniques and the effect teacher training programs have on improving teachers' questioning techniques were discussed.

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[37] J. A. Zahorik, "Questioning in the Classroom," Education, Vol. XCI, No. IV (April, 1971), p. 359.

CHAPTER III

PRESENTATION, ANALYSIS AND DISCUSSION OF DATA

The general purpose of this study was to compare the questioning techniques of elementary language arts teachers with those of secondary English teachers. In addition, the study sought to determine if teachers' stated objectives were congruent with the levels of questions they asked.

In order to obtain the data, five elementary language arts teachers and five secondary English teachers were each observed for three twenty-to-thirty minute periods. Thus, a total of fifteen observations were conducted for each group of teachers.

In a preobservation conference, the teacher stated the objectives for that visit. During the visit, the observer kept a written log of the questions asked, and supplemented this procedure with an audiorecording machine.

The objectives for each observation period were categorized as either recall, process, or application, and a percentage of objectives within each category was recorded. Similarly, the questions recorded during the observation period were categorized as either recall, process, or application, and a percentage obtained for each category. All percentages were rounded to two digits.

A comparison was drawn between the level of objectives and the level of questions for each teacher. Finally, the data on levels of questions asked were computed for each group of teachers and a comparison made.

The major results of the study are presented. The data recorded for each of the thirty observation periods are presented in Tables I and II, with the five elementary teachers represented in Table I and the five high school teachers logged on Table II. These tables also include totals in each category for each individual teacher. Table III offers a comparison of the levels of questions between the two groups of teachers.

The elementary teachers taught students in grades one through four. The high school teachers taught students in the eleventh and twelfth grades.

I. ELEMENTARY TEACHERS

Table I reveals that four of the elementary language arts teachers stated more than half of their objectives in the recall category. The percentages of objectives in the recall category, based on a total from all three observations of a particular teacher, ranged from 45 percent for Teacher D, to 89 percent for both Teachers A and C. However, all five elementary teachers proceeded to ask more than 50 percent recall type questions, including Teacher D. Although

TABLE I

FREQUENCY OF LEVELS OF QUESTIONS AND OBJECTIVES FOR ELEMENTARY LANGUAGE ARTS TEACHERS

Teacher	Recall		Process		Application		Total #	
	Q%	O%	Q%	O%	Q%	O%	Q#	O#
A								
visit 1	64	67	27	33	9	0	55	3
visit 2	51	100	47	0	2	0	49	5
visit 3	57	100	41	0	2	0	51	1
average	57	89	38	11	5	0	155	9
B								
visit 1	70	20	29	80	1	0	86	5
visit 2	*75	86	13	14	13	0	48	7
visit 3	71	60	29	40	0	0	56	5
average	*72	59	25	41	4	0	190	17
C								
visit 1	73	67	27	0	0	33	52	3
visit 2	93	100	7	0	0	0	69	3
visit 3	81	100	19	0	0	0	58	3
average	83	89	17	0	0	11	179	9
D								
visit 1	68	25	28	50	4	25	74	4
visit 2	50	56	50	33	0	11	50	9
visit 3	45	43	52	43	3	14	73	7
average	*55	45	43	40	3	15	197	20
E								
visit 1	63	50	35	50	2	0	60	4
visit 2	91	100	9	0	0	0	53	3
visit 3	95	33	5	67	0	0	61	3
average	*83	60	17	40	1	0	174	10

Q = questions

O = objectives

*Due to rounding procedures some percentages do not equal 100 percent.

TABLE II

FREQUENCY OF LEVELS OF QUESTIONS AND OBJECTIVES FOR HIGH SCHOOL ENGLISH TEACHERS

Teacher	Recall		Process		Application		Total #	
	Q%	O%	Q%	O%	Q%	O%	Q#	O#
F								
visit 1	67	50	14	50	19	0	42	2
visit 2	73	0	27	100	0	0	26	1
visit 3	49	33	49	67	2	0	59	3
average	60	33	33	67	7	0	127	6
G								
visit 1	76	67	24	33	0	0	34	3
visit 2	86	100	14	0	0	0	29	3
visit 3	71	67	29	33	0	0	63	3
average	76	78	24	22	0	0	126	9
H								
visit 1	60	0	40	100	0	0	10	3
visit 2	*48	0	45	100	6	0	33	2
visit 3	51	100	49	0	0	0	37	1
average	51	17	46	83	3	0	80	6
I								
visit 1	71	67	29	33	0	0	41	3
visit 2	100	100	0	0	0	0	47	2
visit 3	85	50	15	50	0	0	39	2
average	86	71	14	29	0	0	127	7
J								
visit 1	*63	50	38	50	0	0	24	2
visit 2	82	100	18	0	0	0	45	1
visit 3	85	100	15	0	0	0	62	1
average	80	75	20	25	0	0	131	4

Q = questions

O = objectives

*Due to rounding procedures some percentages do not equal 100 percent.

TABLE III

COMPARATIVE ELEMENTARY LANGUAGE ARTS TEACHERS
AND HIGH SCHOOL ENGLISH TEACHERS TOTALS

	Recall Q%	Process Q%	Application Q%	Total No. Q#
E.L.A.	70	28	2	895
H.S.E.	72	26	2	591

Q = questions

E.L.A. = Elementary language arts

H.S.E. = High School English

Teacher D asked more than 50 percent of the questions as recall type questions, she had the lowest percentage, 55 percent, of recall questions. The remaining teachers ranged, in percentage of recall questions asked, from 57 percent for Teacher A to 83 percent for Teacher E.

As Table I shows, only two of the elementary language arts teachers stated application type objectives (Teachers C and D), although Teacher C never asked any application type questions. While four of the teachers proceeded to ask some application type questions, no teacher's total percentage in that category exceeded 5 percent. The range of questions in the process category was from 17 percent for Teacher C to 43 percent for Teacher D.

Teacher D appeared to have the most consistency between her objectives and her questions, ranging from a difference of 10 percent in the recall category to a difference of 3 percent in the process category.

II. HIGH SCHOOL TEACHERS

Table II presents the data collected from the fifteen observations of the high school English teachers. Considering at this point the totals for each individual teacher in the high school group, it is noted that two of these teachers stated less than 50 percent of their objectives in the recall category. Teacher H stated 17 percent of her objectives in

that category and, correspondingly, she asked 51 percent of her questions of that type. As Table II shows, this gives her the lowest percentage of recall type objectives and questions. Teacher F stated 33 percent of her objectives in the recall category, and she asked 60 percent of her questions of that type. This was the lowest percent of recall questions and objectives excluding Teacher H. The three remaining teachers' recall objectives ranged from 71 percent to 78 percent, and their recall questions ranged 76 percent to 86 percent.

No high school English teacher stated application type objectives, while two teachers asked that type question. Teacher F asked 7 percent application questions, while Teacher H asked 3 percent application level questions.

Table II also reveals that Teacher G had the highest congruence between objectives and questions, with a difference of 2 percent in both the recall and process categories, for a total difference of 4 percent. On the other end of the scale, Teachers F and H, the two teachers with the lowest percent of recall type objectives and questions, had total differences of 68 and 75 percentage points respectively.

III. COMPARISON QUESTIONS

Table III, page 25, compares total percentages, for each group, of questions asked in each category. Based on these

observations, there is very little difference in the frequency of questions asked in each category. The only figure which is remarkable is that the high school teachers asked almost two hundred fewer questions than did the elementary teachers.

The purpose of this chapter was to present in tabular form objective data to show the congruency of objectives and questions for each teacher observed. It also sought to compare the frequency of questions asked on each level by teachers of elementary language arts and high school English teachers.

CHAPTER IV

SUMMARY OF FINDINGS AND CONCLUSIONS

This study was conducted in order to compare the questioning techniques of elementary language arts teachers with those of high school English teachers. It also attempted to determine if teachers' stated objectives were congruent with the levels of questions they asked. Five elementary language arts teachers and five secondary English teachers from Knoxville City schools were selected for the study.

Each teacher was observed for three twenty-to-thirty minute periods. During the observation a record of the teacher's questions was kept. Prior to the observation, a preobservation conference was held with the teacher. At this time the teacher stated her objectives for the lesson.

I. FINDINGS

Since this study sought to compare elementary language arts teachers' levels of questions with those of high school English teachers, as well as to compare each individual teacher's levels of objectives with the levels of questions she asked, each teacher's questions and objectives were categorized as either recall, process, or application. Percentages were computed in each category for both questions and objectives. Finally, percentages were recorded for the

levels of questions asked by each group, and a comparison was made between the two groups. The results of the data were presented in Tables I, II and III. The findings of the study were summarized in the following statements:

1. A majority of both the elementary language arts teachers and the high school English teachers stated more than half of their objectives in the recall category.

2. Every teacher asked more than half of her questions in the recall category.

3. The two high school English teachers and the one elementary language arts teacher who stated fewer than half of their objectives in the recall category asked fewer recall questions than their colleagues.

4. The percentage of process objectives stated was never congruent with the percentage of process questions asked.

5. Two elementary language arts teachers stated application type objectives while no high school English teachers stated application type objectives.

6. No teacher asked more than 10 percent of her questions on the application level.

7. Comparing elementary language arts teachers, as a group, to the high school English teachers, the percentages of questions asked on all levels, recall, process, and application, never differed by more than 2 percent.

8. As a group, the elementary langauge arts teachers asked 304 more questions than the high school English teachers during approximately the same time period.

II. CONCLUSIONS

On the basis of these findings, the following conclusions were reached:

1. While a few teachers displayed a high degree of consistency in their objectives and questions in each category, an overwhelming majority demonstrated wide variation between the types of objectives stated and the types of questions asked. This suggests that either teachers do not know how to coordinate their objectives and the lesson, or they are unaware that the discrepancy exists.

2. Teachers' questioning techniques, in elementary language arts classes and in high school English classes, center around the use of recall level questions. Again, this may be the result of a lack of knowledge concerning question levels and their use. Teachers might also be afraid to experiment with different question levels with which they are unfamiliar.

3. Elementary language arts teachers and high school English teachers ask approximately the same percentages of recall, process, and application questions. The grade level of the classes being taught did not affect the levels of

questions asked. This suggests that teachers do not expect students' levels of thought to expand as they progress through the grade levels. It also implies that teachers believe that the same methods of teaching will be effective from one grade level to another.

4. Elementary language arts teachers spend more time asking questions than high school English teachers. As a result, elementary students have less time in which to ask questions or participate in a discussion.

III. OBSERVATIONS AND RECOMMENDATIONS FOR FUTURE STUDY

The data gathered in this study revealed little difference between the levels of questions asked by elementary language arts teachers and high school English teachers. In addition, teachers' objectives were found to be incongruent with their questions. Finally, the study concluded that elementary language arts teachers spend more time asking questions than high school English teachers. These results suggest some additional considerations.

1. The results of this study lead to the conclusion that there is no change in the levels of questioning as students progress from elementary to high school education. Additional studies should be conducted in other school systems and curriculum areas in order to check the validity of this conclusion.

2. Teachers need further training in order that they could learn how:

(a) to write objectives properly, and construct their lessons in accordance with those objectives; and

(b) to recognize the different levels of questioning, and how to progress to the higher level of questioning as their students demonstrate such capabilities.

3. Future studies and teacher training programs could focus on how to instigate and improve student questioning activities.

4. Future studies could focus on the answers given to the different types of questions to see if they actually result in higher levels of thinking by the students. Studies comparing different grade levels could prove to be important.

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APPENDIX

Following are two sample question logs. They are representative of the thirty question logs recorded during the course of the study. A similar log was kept for each of the thirty classroom sessions observed.

The symbols at the top of the page were used throughout each observation to indicate the level of the question asked. As is shown in each sample, these same symbols were also used to determine the level of stated objectives.

Prior to the actual observations, the observer asked the teacher to state her objectives for the upcoming portion of the lesson. The objectives were recorded just as the teacher stated them. The number of objectives so stated ranged from one to nine, as the objectives were related only to the portion of the lesson that was about to be observed.

After recording the teachers' objectives, the observer entered the date and time at the top of the question log. All observations lasted from twenty to thirty minutes.

SAMPLE ELEMENTARY LANGUAGE ARTS QUESTION LOG

Symbols

R = recall level

P = process level

A = application level

Objective

R Comprehension of Thomas Jefferson's life.

March 22, 1977 8:45-9:10

R He took notes so often it became what?

P When you do things over and over it becomes what?

R He took notes about everything?

R What have you taken notes about?

P Think you might ever look back?

P What?

A What will you do with your notes after you take them?

P Do you think Thomas Jefferson had a system?

R What do you know of that he took notes about?

R What else?

P Would he put those notes in the same place?

P Why does he write it all down?

P Why worry with all that?

P Should we trust our memories?

P Would it be a good idea to take some notes as you read the book?

P Do you think other people besides the President need notes?

R How did it happen that he had to design it himself?

P Why wouldn't there have been any architects around?

R What kind of houses did the first settlers build?

R People were mostly concerned with what?

R What was he mostly concerned with at first?

R Was your hand up Kenny?

R Isn't it?

R What evidence is in this story that Thomas Jefferson improved the monetary system?

R What is a monetary system?

P Do you think he knew he was going to be President?

P Did he know it would work out?

R What did he say?

P Would you call Thomas Jefferson a genius?

P Would we call him a genius?

R What does your glossary say about genius?

P Did Thomas Jefferson have this?

R Did it show itself in some particular form?

P Do you know of any other people that could be considered a genius?

P Any others?

P Anybody in the present day?

P Maybe some of the scientists at Oak Ridge?

R How did Jefferson contribute to the field of Education?

R What is that?

R Where do you go?

P Do you have to go to school to get an education?

R His father insisted that he do what?

R How did he feel about schools?

R What contribution did he make?

R Where did he go to college?

R How many colleges were there then?

R Wonder what the others were?

R How many colleges are there in Knoxville?

R What?

R Where is that?

SAMPLE HIGH SCHOOL ENGLISH QUESTION LOG

Symbols

R = recall level

P = process level

A = application level

Objectives

R To be able to repeat the dialog.

R To understand the dialog.

A To empathize with the character.

March 8, 1977 2:00-2:25

R Do you remember what a soliloquy is?

R Anybody know?

R Remember what we said the other day?

R O.K. what?

R Would you like to add to what Donna said?

R Do you know what Tim said?

R O.K., can you go on?

P Why do you think a soliloquy is important?

R He's told us a lot hasn't he?

R What has he told us?

P What would this have to do with it?

P Would you assume this, after she got married that quickly?

R We know how long its been that she's been married, right?

P Do you find that a quick amount of time to go from one man to another?

P Especially if what?

R What else do you learn from his soliloquy?

R He what?

P Why do you think he's not going to say anything?

P Anybody else?

R What else did we learn?

R How does Hamlet feel?

R When he says, "......." what would he like to do?

R He would like to kill himself wouldn't he?

R Why can't he?

R When he says, "......." what is he referring to?

R What is the everlasting?

P You would have to be awful low to want to kill yourself wouldn't you?

R How did he feel about her?

R What about the line 140?

P What do those lines mean?

P What's he saying James?

R What does frail mean?

R Does he feel that his mother is frail?

R How is she weak?

R Do you know what incest means?

R What does incest mean?

R What does dexterity mean?

P What do you mean you can't do that?

P Could you?

R He couldn't drive to Chattanooga and get married?

R Now what Paul?

R The Bible says what?

R Where were we?

P Do you think this is why he called her frail?

P Explain why you are agreeing with me?

P Why do you assume that?

P You think she must have gotten married so quickly because she was playing around?

R Do you know that?

R He was depressed enough to _____.

R It's been around _____.

R Why are Horatio and Marcel coming here?

R Why?

R Were you able to follow this better?

P Why?

P What else?

R Hamlet doesn't want them to do what?

R Why?

R Tell me the word that describes a solo speech?

R Say the word for me Carol?

R Do you like love stories?

R Soap operas?

R When is the last time we saw _____?

R What happened?

VITA

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