A COMPARISON OF THE EFFECTS OF STUDENTS' OWN NOTES AND GUIDED NOTES ON THE DAILY QUIZ PERFORMANCE OF FIFTH-GRADE STUDENTS.

A Thesis

Presented in Partial Fulfillment of the Requirements for the degree of Master of Arts in the Graduate School of the Ohio State University.

by

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****

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To My Students: Past, Present and Future.
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ABSTRACT

The effects of two notetaking strategies, guided notes and students' own notes, on the daily quiz performance and notetaking accuracy of fifth-grade social studies students were compared. The students in the class included Specific Learning Disabled, Gifted and Talented, and Regular Education fifth-graders.

As the teacher lectured, students took their own notes during baseline (students' own notes) phases or completed a set of guided notes during intervention (guided notes) phases.

Performance was evaluated using daily 10-point quizzes. Notetaking accuracy was measured by counting the number of lecture concepts included in students' notes (own notes or guided notes).

Results of the reversal design showed that daily quiz performance for all students, especially the SLD students, improved during the Guided Notes phases. Furthermore, students' notetaking accuracy significantly improved during Guided Notes phases.
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CHAPTER ONE

INTRODUCTION

Successful students attend class, take notes and participate in classroom discussions. They are expected to gain information from lectures and assigned readings. Their success, in turn, is dependent upon their ability to organize and recall that academic information. To do this students must decide what information is important and organize it into meaningful notes.

Some students, especially those with learning disabilities, are not able to produce efficient and effective notes that will aid them later in studying for tests. Typically these students have difficulty in selecting and attending to relevant information during instruction (Tarver, 1981). They often lack the necessary language and motor skills required for effective notetaking (Schumaker & Deshler, 1984).

The ability to take thorough and accurate lecture notes is among the many skills involved in academic success (Baker & Lombardi, 1985). Sasaki, Swicegood, and Carter (1983) reviewed several studies conducted
with diverse groups of students in various settings that found notetaking facilitated recall. Other research indicates a positive relationship between students who take and review their lecture notes and academic achievement (Baker & Lombardi, 1985; Fisher & Harris, 1973; Kiewra, 1984, 1985). Ladas (1980) attempted to summarize existing research on notetaking by saying that most of the evidence strongly favors notetaking.

Students lacking in organizational and study skills are usually not actively involved in learning because they do not have the skills necessary to be actively engaged (Deshler, Schmoker, Alley, Warner, & Clark, 1982). Students who have deficits in attending and listening skills are less likely to participate in class. A large body of research suggests that academic learning is correlated to active student response. That is, students who respond actively to instruction are likely to achieve more than students who are passive (Greenwood, Delquadri, & Hall, 1984).

Since this is the case, teachers need effective strategies for increasing active student response during a lesson. Finding effective strategies for helping students gain and respond to information during
lecture-based instruction may be especially important, since students are often passive listeners during lecture (Deshler & Schumaker, 1986).

Many strategies to help students with notetaking difficulties have been suggested, researched, and even implemented. Notetaking formats, using a three-column format have been specifically designed for use with LD students by Alley and Deshler (1979) and Sasaki, Swicegood, and Carter (1983). Various types of advance organizers, graphic organizers, structured overviews, and visual-spatial displays are among some of the other strategies used to help students record and respond to instructional information. Still other methods are teacher completed notes, such as "skeleton notes" or guided notes, outlines and lecture handouts.

Guided notes refer to a handout which guides students through a lecture or presentation by providing students with a format that includes basic information and cues students to take note of key points (Heward, Test, & Cooke, 1986). Guided notes promote active participation in instructional activities and opportunities to respond (OTR) to and interact with teachers and classmates (Lazarus, 1988). Furthermore, guided notes enable students to actively participate in
notetaking, follow along with the sequence of the lecture, and produce a summary of important information that is useful for future review.

Though some classroom teachers currently use guided notes, only a few empirical studies have been reported on the effects of guided notes.

Purpose of the Study

This study was conducted to compare the differential effects on next day quiz score of two types of notetaking methods during large group social studies instruction in a fifth-grade classroom. The two notetaking methods were: (1) students writing their own notes on lined notebook paper; and (2) students writing key concepts/facts or guided notes. Twenty fifth-grade students, of whom two were specific learning disabled, seven gifted and talented, and 11 regular, took part in the study. Academic achievement was measured with a 10 item quiz administered on the school day following each lecture.

Literature Review

This literature review contains sections on notetaking, opportunity to respond/academic student response, and guided notes.
**Notetaking**

**Advance Organizers.** Ausubel (1960) first introduced the concept of advance organizers. An advance organizer introduces the learner to the lesson or learning task by providing a framework of reference points intended to aid the learner in taking in new information. A teacher presents advance organizers before a lesson to provide an organizational structure for the content and activities to follow (Lenz, 1983). Several types of advance organizers have been discussed in the literature: structural organizers (Slater, 1985), graphic organizers (Hawk, 1986), visual notemaking (Stein, 1987), visual spatial display (Darch & Carnine, 1986), mapping (Anderson & Armbruster, 1981), and networking (Dansereau, 1979). Regardless of the type of advance organizer used, the intent is to aid the student in organizing information, which results in better comprehension of the material (Darch & Gersten, 1986).

Most pre-1969 advance organizers took on the format of a prose passage (Hawk, 1986). A statement of the lesson's content and structure was presented to the student prior to instruction in the hope that it would facilitate expository teaching and receptive learning (Ausabel, 1960; Ausabel and Youssef, 1963).
Research does show that using the prose passage advance organizer does facilitate learning to some degree. Practice indicates that advance organizers can be difficult to make and use in an instructional context (Barnes & Clawson, 1975). Barron (1969) suggested a change in the advance organizer format, and so the structured overview came into being.

A structured overview is a, "diagrammatic representation of the basic vocabulary of a unit so as to show relationships among the concepts represented by those words" (Herber & Sanders, 1969, p.4). In recent years the structured overview has gained popularity in teaching reading in the content areas (Hawk, 1986).

Slater (1985) introduced the concept of a structural organizer in a study evaluating the effects of giving students information about the organization of expository passages before they read them. Two hundred twenty-four ninth grade suburban high school students were asked to read passages of an expository text from a junior high school American History text that had been edited and organized by one of two structural organizers developed by Slater. The first structural organizer included an outline grid of the passages' top-level organization which students were to
fill in as they read the passage. After reading the passage, students were to write a recall summary using the organization of the passage. The second structural organizer was exactly like the first except that is did not include an outline grid for the students to complete as they read the passage.

Results from both dependent measures, a 20-item multiple choice post-test and the number of idea units recalled in student written summaries of what they had read, showed that students did best when receiving the structural organizer along with completing the outline grid. The next highest results came from the control condition with notetaking, followed by students receiving the structured organizer without a grid, and lowest scores from the control condition without notetaking.

Structured overviews are often referred to as graphic organizers in the literature. Graphic organizers were intended as a readiness activity. More recently, they have been mentioned as techniques to help students organize material, concepts, or vocabulary prior to reading content area material (Herber, 1978; Tierney, Readence, & Dishner, 1980). Graphic organizers have been shown to be beneficial in
increasing student achievement in initial learning and retention (Hawk, 1982; Hawk, McLeod, & Jeane, 1981). Hawk (1986) designed a study to extend the findings regarding the effectiveness of graphic organizers on student achievement. Specifically, his study was conducted to determine the effectiveness of using graphic organizers to facilitate learning of life science concepts by above average sixth and seventh grade students. Three variables were present throughout the study: (1) an experimental variable (graphic organizer); (2) a covariate variable (pretest); and (3) a dependent variable (post-test).

The graphic organizers used by Hawk consisted of a pictorial, visual, and/or graphic presentation that gave teachers a strategy to provide written and graphic organization to the content. For example, to help students with the concept of a cell and protoplasm the teacher develops a graphic organizer that consists of a visual illustration or picture combined with words. In the case of the cell, a cell showing the protoplasm and nucleus was drawn under the word protoplasm. Lines extending down from the cell connected to pictures of a fish (for protein), cube (for sugar), and cylinder (for fats). One line drawn out to the side of the cell
gives examples of inorganic substances like water, minerals, and dissolved gases. During instruction, students can add other pertinent information to the graphic organizer. (For more information on techniques for preparing graphic organizers see Hawk & McLeod, 1985).

All students were given a pretest during the second week of school. Students were instructed alike during the first semester. The only variation was that 8 of 15 classes received graphic organizers. This consisted of teachers giving students in the treatment group a graphic organizer at the beginning of each chapter. Students were told they were study guides. During the second week in January, the post-test was given to all 15 classes.

The results of the Hawk (1986) study support using graphic organizers as a teaching strategy to improve student achievement. Students using the graphic organizer had an adjusted mean difference between pretest and post-test of 21.34, while students who did not use the graphic organizer had an adjusted mean difference of 12.07. His study also supports previous findings in the middle grades (Hawk et al., 1981). Hawk (1986) presented several reasons why graphic
organizers enhance learning. Graphic organizers (1) provide an overview of the material to be learned, (2) provide a framework of reference points that aid the learner in getting new vocabulary and organizing new concepts, (3) cue students as what to look for as they read, (4) are concise and informative as a tool for review, and (5) provide visual aides for written and/or verbal information.

Visual notemaking is a type of advance organizer similar to the graphic organizers used by Hawk (1986). Stein (1987) claims that visual notemaking is a tool that helps students reason during class discussions, prepare for tests, remember more, and use writing to become active participants. Stein goes on to say that visual notemaking on the notebook page helps students improve in their learning by giving them a tool to use for studying for tests, and writing essays.

Visual notemaking consists of drawing diagrams, such as the T-line, stickperson, and star that illustrate narrative or chronological verbal thought. For example, the "stickperson" figure is used by students whenever the teaching topic is about a person or a group of people. The student draws a stickperson on his paper and attaches notes to one of the seven
areas on the stickperson. Ideas are written next to the brain, visions or hopes next to the eyes, words by the mouth, actions beside the hands, feelings by the heart, movements beside the feet, weaknesses by the Achilles' heel, strengths beside the arm muscle, background information below the ground, and important dates are placed at the ground level. Stein (1987) also suggests numerous ways teachers can help students organize their notebook pages into a grid that uses visual notemaking combined with verbal notemaking using symbolic visual substitutes for thought patterns. (See Stein, 1987, for a complete description and illustration of visual notemaking formats.)

An approach which utilized an advance organizer in the form of a visual spatial display was used by Darch and Carnine (1986). Their visual spatial displays used lines, arrows, and spatial arrangements prepared by the teacher that described the text content, structure, and key conceptual relationships. Visual spatial displays may also be thought of as a type of graphic organizer.

Darch and Carnine (1986) evaluated and compared the effectiveness of using visual spatial displays to a method which presented content via text when teaching
fourth, fifth, and sixth grade learning disabled students science and social studies. Results revealed that students in the visual display group outperformed the text group on post-test measures with a mean score of 86% and 56% respectively. These results are consistent with the earlier findings of Darch and Carnine (1984) who used visual displays with regular students.

Darch and Carnine (1986) suggest possible reasons for the effectiveness of the visual spatial displays. First, they allow the teacher to highlight the most critical concepts, thereby eliminating irrelevant detail. Second, students could use the technique as a way of organizing incoming information.

**Completed Notes.** Students are known for their poor notetaking skills. Research done by Hartley and Marshall (1974) indicated that college freshmen may record as few as 11% of the critical lecture ideas, and that upper level "A" students may record only about 62% of the key lecture ideas (Locke, 1977).

A common practice in conventional lecture classes is to supply the student with lecture notes (Carrier & Titus, 1979; Hartley, 1976). Lecture notes (handouts) enable a student to see the structure of the lecture in
advance and may lead to a more accurate review of notes (Hartley & Marshall, 1974).

Kiewra (1985) states that because the notetaking behaviors of students are generally incomplete, perhaps it would be best to provide them with a prepared set of lecture notes. The advantage to this is that the amount of critical lecture information can be regulated and that students can then review a more complete set of notes. These "supplied" lecture notes can range from skeletal formats to detailed, complete prose formats.

Research done regarding the relative advantages of reviewing students' own notes or lecture supplied notes prior to a delayed exam has produced mixed findings. Thomas (1978) found that non-notetaking students who received a lecture summary, recalled less on a 20-minute free recall test. However, notetaking students who were given a topical outline containing a topic sentence for each paragraph of the lecture recalled more than notetaking students who had been given blank sheets of paper. Students able to review both the lecture handouts and their own personal notes recalled more than students who only reviewed one or the other (Annis & Davis, 1975). Fisher and Harris
(1973), however, found that no differences in the amount of information recalled by students who recorded and reviewed their own personal notes to those of students who recorded their own notes, but reviewed lecture handouts.

Kiewra (1985) conducted a study with college students who either took notes or listened to a videotaped lecture. Two days later notetakers reviewed their notes and listeners reviewed the instructor's notes before taking a delayed test. This study measured both immediate and delayed recall. Results showed that students who listened to the lecture and reviewed instructor's notes increased their general test performance from immediate (55%) to delayed testing (69%). Students using just their own notes had general test performance that decreased from immediate (51%) to delayed (46%) testing. There was also significant difference in recall of factual material by students who listened and reviewed instructor's notes (88% performance level) compared to students who reviewed their own notes (54% performance level). Results suggest that listening to a lecture and reviewing instructor's notes leads to higher
achievement than using the traditional method of taking and reviewing personal lecture notes.

Freyberg (1956) found that students did slightly better on delayed tests when they reviewed a duplicated lecture summary than those students who reviewed their own notes. Students attending a lecture who received a lecture outline scored higher than students who reviewed either a lecture transcript or no notes on delayed tests (Northcraft & Jernstedt, 1975).

Achievement is related to the completeness of notes (Kiewra, 1984). Crawford (1925), Fisher and Harris (1973), and Locke (1977) all found that students who take more notes score higher on achievement tests than do students who take fewer notes. Kiewra and Fletcher (1983) found that instructor's notes provided more complete information than the brief notes generally recorded by students. Furthermore, Collingwood and Hughes (1978) indicated that when some form of a lecture note handout is provided for students rather than having them personally record notes, reviewing the more complete lecture handout will result in higher achievement.

Hartley (1976) did a group of five experiments where he varied the type and amount of
details which students needed to add to lecture handouts. For the most part, his findings showed that lecture handouts aided recall if students were required to fill in missing information.

Personal notetaking strategies and formats.
Numerous experiments have shown that 50% of the information read in a book or heard in a lecture is forgotten (Pauk, 1979a). Students take notes because they believe that the process of notetaking will somehow help them recall that information later (Hartley & Davies, 1978). Furthermore, students believe that the product of their notetaking, their notes, will give them a record of the lecture content and enable them to review, recall, and reconstruct the original material. In a survey done of dental hygiene undergraduates, 100% of the respondents strongly agreed with the statement "I almost always take notes in lectures" (Carrier & Newell, 1983).

Five conclusions based on the notetaking literature are presented by Carrier (1983): (1) students who take notes during a lecture learn more than those who simply listen, (2) students learn more from a lecture if they both record and review their own notes, (3) review of notes leads to improved test
performance. (4) Lectures can facilitate student notetaking by highlighting important information and providing a clear organizational framework, and (5) students with different abilities may require different notetaking strategies.

Many formats for notetaking exist. However, no particular notetaking strategy has been found to be significantly more effective than others (Palmatier, 1971; Pauk, 1963). Devine (1981) concluded that most investigators seem to agree that any notetaking strategy is better than none at all.

Palmatier (1973) points out three aspects that should be considered when choosing a notetaking method: (1) the method should be easily learned, (2) the method should be flexible so that material from both reading or lectures can be recorded, and (3) the method should facilitate learning of the material. The Notetaking System for Learning (NSL) designed by Palmatier (1973) satisfies all of these aspects.

The NSL uses an 8 1/2 inch by 11 inch sheet of paper with a vertical line drawn to produce a left hand column that is about three inches wide. Lecture notes are recorded in the wider column, the right side. Labels that correspond with the information recorded in
the right hand column, the original notes, and any other pertinent information from the text is written in the left hand margin. To study, the student spreads out all pages of his notes in an order so that the original notes are covered by each succeeding page leaving only the labels in the left margin showing. Students use the labels to come up with test questions, using the notes on the right as an answer key.

The "great cue column" (Pauk, 1979b) is another method for taking personal notes. It is very similar to the NSL method, except that the left hand margin is only two and one half inches wide and the label placed in the left hand column is referred to as a cue. To study, students cover the lecture notes with a blank sheet of paper, leaving only the cue words exposed. Using the cue words, students recite aloud, in their own words, all the facts or ideas that are hidden under the blank sheet.

The Cornell Notetaking System (CNS) is another method of personal notetaking similar to the great cue column. To study, students fold the page on the vertical margin line so that only the left column containing the key ideas are visible. The student uses the key words to remember notes and checks by reading
the hidden side (right side). (For more information on the Cornell System, see Pauk, 1974).

Another method of notetaking for students is the traditional outline format (Alley & Deshler, 1979; Devine, 1981). Even though this format stresses subordination of ideas, most authors consider outlining as an insufficient means to efficient notetaking (Saski, Swicegood, & Carter, 1983).

Students having problems dealing with large amounts of academic information seem to do better with a columnar notetaking format (Saski et al., 1983). A three-column format that incorporates factual information, summaries, and student input was designed for learning disabled students by Alley and Deshler (1979). In this format, the center column is used to record notes, and the narrower left and right hand columns are used to label the units of information from the notes and to reflect upon all information recorded, respectively.

Saski et al. (1983) point out that few authors have dealt with the topic of notetaking for learning disabled adolescents. They go on to say that learning disabled adolescents need a more specific format that uses instructional activities to organize the amount of
information they encounter daily. When planning an efficient notetaking format, five factors should be considered: space, subordination, division, questions, and connections (Saski et al., 1983). Two notetaking formats were designed to incorporate these five factors and to aid students with material organization (Saski, et al., 1983). Both formats use three columns.

The first format divides the pages into three columns labeled Old Information (two inches wide), New Information (five inches wide), and Questions (one inch wide). Across the top of the paper a line is drawn for the topic title. Each page contains only one topic or idea.

The new information column is the basic notetaking column onto which the majority of information is recorded. The old information column contains facts or ideas the student has previously learned and is the column completed next. The questions column is where the student marks the information that needs to be clarified and checks possible test information.

The second format is also divided into three columns (same width dimensions as in the first format) that are labeled basic ideas, background information, and questions. The top of the page contains a topic
sentence having to do with the specific material to be covered. The basic ideas column is the basic notetaking column that stresses information needed for future tests or reports. The background column includes related or interesting information (to the student), as well as, pertinent background information. The questions column contains markings or comments about any notes that are unclear or need elaboration.

As can be seen from this brief overview of notetaking literature, many notetaking formats and techniques exist. However, while these methods have been proposed, there is a lack of consistent, empirical research on these methods. None of the formats described will alone teach notetaking skills to students. Instead, teachers need to consider the ability levels of students, the information to be presented, the type of test to be used, and organization of the material to better help students choose formats that will best aid students in organizing and recalling information.

**Opportunity to Respond/Academic Student Response**

**Academic learning time.** Students learn efficiently when they are actively engaged in learning activities at an appropriate level of difficulty
(Berliner, 1980). If they are, the amount of time they spend on task will increase (Zigmond, Sansone, Miller, Donahoe, & Kohnke, 1986). Teachers need to monitor students' progress on selected learning activities to insure that students are experiencing success and minimal levels of frustration (Brophy & Evertson, 1976; Fisher et al., 1980). High success rates are preferred when students work for extended periods of time without teacher guidance. However, lower success rates are admissible when the teacher is present to give guidance.

The importance of high success rates was stressed by Fisher et al. (1980) when they coined the term "academic learning time" (ALT). They defined ALT as the time a student spends engaged in an academic task that is performed with a high rate of success. High levels of success appears to be an important variable in learning, particularly with young students and lower ability students (Berliner, 1980). Berliner states that a high success rate during learning is a positive predictor of school achievement.

Other important variables related to ALT are allocated time and engaged time. Success rate, ALT, engaged time, and allocated time all interact with
teacher behaviors and classroom characteristics to influence student achievement (Berliner, 1979). The total amount of time made available to the student by the teacher is called allocated time. The time that a student attends to the instructional materials or activities is called engaged time.

Teachers who stress instruction, expect students to master the materials, and allocate the most time possible to academic activities, maximize student achievement (Brophy & Evertson, 1976; Fisher et al., 1980). The Beginning Teacher Evaluation Study (BTES) (Berliner, 1979) found a positive relationship between student achievement in a content and time allocated by the teacher for that content area.

Many empirical studies continue to support the belief that engaged time is a predictor of classroom achievement. Fisher, et al., (1978) found that in certain content areas, engaged time was a consistent positive predictor of school achievement. BTES investigators also found that the amount of allocated time in which students are engaged in academic tasks is positively associated with learning. Research by Greenwood, Delquadri, and Hall (1984) and Fisher, et al. (1980) has shown that the time a student spends on
academics correlates highly with the academic achievement gains of that student. Carroll's (1963) model of school learning designates engaged time as one of the five major determiners of school achievement (cited in Berliner, 1980).

Teacher management behavior, student engagement and student achievement of 672 middle and high school science students were studied by McGarity, Jr., and Butts (1984). They found greater achievement gains in the post-test than the pretest for students who had spent more time engaged on task.

High levels of engaged time on task rates reached through successful classroom management is a very powerful indicator of student achievement (Brophy & Evertson, 1976; Fisher, et al., 1980). Engagement rates are dependent on the teacher's ability to organize the classroom with regard to smoothly run activities, brief and orderly transitions, and minimal time spent with organization and discipline.

**Opportunity to respond.**

Researchers at the Juniper Gardens Children's Project coined the term "opportunity to respond" (OTR) which they defined as the rate or frequency that students engaged in specific academic responses
(Stanley & Greenwood, 1983). More specifically defined, OTR refers to the interaction between instructional antecedent stimuli arranged by the teacher and the successful academic responding established by the stimuli (Greenwood, Delquadri, & Hall, 1984). These researchers go on to say that instructional techniques affording all students to make desired responses is suggested by the term OTR.

Greenwood, et al. (1984) describe two components of OTR. The first is an analysis of the environmental events that occasion student academic responding. These may include scheduling of instructional time, teacher/student interaction patterns, classroom organization, and provision of level-appropriate materials. The second component is the actual student response. Techniques establishing high academic responding rates by most students are those that offer the greatest opportunity. So, opportunity is verified by the resulting academic behavior (Greenwood, et al., 1984).

Research has shown a strong, consistent relationship between opportunity to respond and academic achievement (Delquadri, Greenwood, Stretton & Hall, 1983; Greenwood, et al., 1984; Pratton & Hales,
1986; Hall, Delquadri, Greenwood & Thurston, 1982). In fact, researchers have found that increasing the opportunity to respond is a more important variable in increasing academic achievement than reinforcing students for their academic responses (Delquadri & Greenwood, 1981).

Results of a study done by Hall, et al. (1982) of inner-city classroom students in grades 1-4, revealed that while 75% of the day was devoted to academic instruction, these students were only actively engaged in academic instruction for 25% of the day. Greenwood, Delquadri, Staneiy, Terry, and Hall (1985) observed teacher and student behavior in Title I and non-Title I fourth grade classrooms. Title I classrooms contained a large percentage of minority students with lower socioeconomic status and were located in inner-city schools. Non-Title I schools contained a larger percentage of white students and were located in the suburbs. Results of the study showed that teachers in Title I classrooms made use of instructional techniques that provided minimal opportunities for students to be actively engaged in academic responding. The investigators conclude that the lower level of academic
achievement by Title I students can be associated with their decreased opportunities for academic responding.

"Active participation is a result of a deliberate and conscious attempt on the part of the teacher to cause students to participate overtly in a lesson" (Pratton & Hales, 1986, p. 211). Active student response (ASR) is defined as the number of observable, measurable academic responses made to instructional antecedents (Courson & Heward, 1988). ASR includes such responses as spelling, writing, oral reading, asking and answering questions, solving math problems, and measuring objects. The active participation or academic student responding of students was found to be consistently correlated to student academic achievement by the researchers at Juniper Gardens.

Three experiments, comparing the effects of instructional arrangements that varied in teacher vs. peer tutors, methods used, level of student academic responding generated, and content taught, were conducted by Greenwood, Dinwiddie, et al. (1984). Participants were five teachers and 128 Title I elementary students. Students' levels of academic responding and instructional arrangements (i.e.,
teacher behavior, teacher position, lesson structure, student tasks) were measured. Results from Experiment 1 show peer tutoring resulted in higher levels of student academic responding and higher weekly test scores in spelling compared to the teacher's procedures. Experiments 2 and 3 used a multiple-baseline design across content areas (spelling, math, vocabulary) and replicated the findings of Experiment 1.

Pratton and Hales (1986) conducted a study investigating the effects of active participation on students' learning of simple probability. Five teachers and 20 fifth grade classes participated in the study. Each teacher taught four classes (two with and two without active participation). Independent variables were levels of active student participation or non-participation and the dependent variable was a 15-item multiple choice test given right after the lesson. Class means for the active participation group on the dependent variable ranged from 78% to 87%, whereas the class means for the non-active participation group ranged from 71% to 77%. Results indicated that active student participation had a
positive influence on the achievement of these fifth grade students.

Research has shown that students' level of achievement is greater if they are engaged in higher levels of academic responding. Thus, one of the primary jobs of a teacher is to maximize student learning by increasing students' opportunities to respond/academic student responding.

**Strategies for increasing OTR/ASR.** A positive relationship between OTR/ASR and student achievement has been established (Greenwood, et al., 1984; Borg, 1980). All students need to have their learning opportunities increased (Gradon, Thurlow, & Ysseldyke, 1982). Thus, researchers are continuing to develop and evaluate many different strategies with which to increase academic student responding. Some of these strategies include peer tutoring, timed trials, rapid paced instruction, computer assisted instruction and learning centers. This section briefly describes the following in-unison student response modes: choral responding, response cards, structured worksheets, and guided notes.

Strategies already being implemented by teachers to increase ASR/OTR are classwide peer tutoring (Cooke,
Heron, & Heward, 1983; Delquadri, Greenwood, Whorton, Carta, & Hall, 1986), computer assisted instruction (Carlson & Silverman, 1986; Torgensen, 1986), and the use of learning centers (Carlson & Tully, 1985).

Timed trials (Van Houten & Thompson, 1976) and rapid paced instruction (Carnine, 1976) are classified as group strategies to increase ASR and are referred to as specific teacher presentation techniques (Heward, et al., 1986). Teachers modify their method of presentation of instruction when using a specific teacher tactic.

In-unison student response modes, as opposed to the traditional calling on one student at a time with his/her hand raised, is where all students in a group respond at the same time (Heward et al., 1986). Suggested in-unison response modes are choral responding (Heward, Courson, Narayan, in press; McKenzie & Henry, 1979), response cards (Narayan, 1988; Wheatley, 1986), structured worksheets and guided notes (Kline, 1986; Lovitt, Rudsit, Jenkins, Pious, & Benedetti, 1985, 1986; Yang, 1988).

Choral responding is a type of in-unison oral responding to teachers' questions. Choral responding is appropriate for material that has only one answer.
has a short (1-3 word) answer, and is suitable to fast-paced instruction (Heward et al., 1986).

Response cards are cards, signs, or items which are held up by students and easily seen by the teacher. There are two types of response cards: pre-printed and write-on. Pre-printed response cards are cards that already have individual student responses printed on them. Pre-printed response cards provide the highest rate of ASR. Write-on response cards are cards on which students must write or indicate their answers. These can be note pads, small chalkboards, magic slates, laminated cardboard or Formica boards used with dry markers.

Structured worksheets are worksheets given to students by the teacher and are to be completed by the student as the teacher presents the lesson. The worksheets consist of a series of problems or items that correspond to the teacher's presentation. Structured worksheets should include examples of completed problems or models.

Guided notes refer to a handout given to the student just prior to a lecture or presentation. The guided notes guide the student through the lecture by providing a "skeleton-like" outline format that
includes basic information and cues the student to note key points. The next section will discuss guided notes in greater detail.

**Guided Notes**

Students in most typical classrooms are required to gain information from textbook reading assignments, lectures, and class discussions. Some students, especially those with learning disabilities, have a difficult time meeting these demands (Schumaker & Deshler, 1984). Being able to take good notes is emphasized, since students are usually later evaluated on their recall of this information. Research has shown that there is a positive relationship between students who take notes and academic achievement (Kiewra, 1985; Baker & Lombardi, 1985; Carrier, 1983).

In order to gain the required information and take good notes, students need to know what information is important and what information is not. Students, particularly learning disabled students, are often lacking in the methods needed to accomplish these information-acquiring tasks (Carlson & Alley, 1981). Also mainstreamed LD students are usually not actively involved in their learning because they do not have the
skills necessary to be actively involved (Deshler, Schumaker, Alley, Warner, & Clark, 1982).

One strategy available to teachers that promotes active student responding and better note taking is called guided notes. Guided notes can be thought of as a type of advance organizer; a method of modifying instruction and adapting materials. A guided note is a handout which "guides" the student through a lecture or presentation by furnishing a format that includes basic information and cues students to note key points (Heward et al., 1986). Students complete the guided notes by filling in missing information as the teacher presents information.

Heward et al. (1986) cited the following advantages of using guided notes: (1) students must respond and interact with the material, (2) students are provided a standard format for taking notes and for studying, (3) students are better able to determine if they really understand the material and are more likely to ask for clarification, (4) teachers are more likely to stay "on task", (5) students are focused on the materials being presented, (6) students are cued to note key points, and (7) teachers are required to plan carefully.
Skeleton notes are a style of guided notes which cover the main points of a lecture in an outline format. Klemm (1976) found that skeleton notes improved the efficiency of study time, improved student learning, and that students enjoyed using these notes. "The 'skeleton' form of the handout seems to be its chief asset, in that the students must actively respond to the lecture and constructively complete the notes in a form most meaningful to him" (Klemm, 1976, p.12).

Lovitt et al. (1985) conducted one study investigating the effects of two methods for adapting a seventh-grade science text. One method, Precision Teaching (PT), featured vocabulary exercises. The second method, Study Guides (SG), featured framed outlines. The framed outlines are a sequenced listing of the main ideas in a chapter of a textbook. Some of the words and/or phrases are left out of the sentences. As the teacher lectures, he or she fills them in, while at the same time, the students write in the items on their sheets. Guided notes also have words or phrases that are left for the student to fill in as the teacher lectures and fills in these items. Both are handouts that guide students through a lecture and cue students to note key points. Results showed that students in
both the PT and SG groups performed better on the post-test as compared to the students who received no treatment. Furthermore, the treatments used were effective with children of all achievement levels.

A second study by Lovitt et al. (1986) included the main features from both the PT and SG methods. Vocabulary exercises from the PT method and framed outlines from the SG method were used during science instruction of seventh grade learning disabled and regular class students. Some, but not all chapters were modified. Results from comparison of post-test scores showed that students did better on the modified chapters (chapters for which they received the vocabulary exercise and framed outline).

Kline (1986) conducted a study on the effects of using guided notes on the academic achievement of learning disabled high school students during an American History class. Her study compared the traditional method of students taking their own notes during a lecture with that of students using guided notes. The subjects were six male and four female tenth and eleventh grade students enrolled in a Specific Learning Disabilities Program. The subjects' IQ scores ranged from 81-100. The study was conducted
in the LD resource room located in a public high school of a large city school system. This particular American History class met daily during the last period of the day. The experimenter and the teacher were one in the same.

A reversal design (ABAB) was used to compare the effectiveness of students' own notes and guided notes. Baseline conditions consisted of the lecture-take-notes method. Students and teacher first read the assigned text pages together. Next the teacher used an overhead to display important information. Students could take notes as the teacher discussed the material displayed on the overhead. At the end of each session a 10-point quiz was given covering that day's material.

Intervention conditions consisted of the guided notes method. The same procedure as was used for the baseline conditions was followed with one exception. That being when the teacher was ready to use the overhead transparency, the students were provided with a copy of the information on the transparency. As the teacher presented the material, the teacher and students filled in the guided notes together.

Results demonstrated a definite improvement in daily quiz scores when guided notes were used.
Students' average daily quiz scores were 66% during baseline conditions as compared to 88% during guided notes conditions. A 24% increase was realized when guided notes were used.

A study using guided notes in a sixth-grade middle school class studying oceanography was conducted by Yang (1988). Subjects were 20 students, including 4 mainstreamed LD students, in a regular science class. Using a reversal design (ABAB), Yang found that the use of guided notes yielded higher scores on 10-item quizzes (5 short answer and 5 multiple-choice questions) taken the day after lecture as compared to baseline in which students took their own notes. Quiz scores for the LD students greatly increased in the second guided notes phase when the resource room teacher spent 10 minutes a day reviewing the notes that the LD students brought to the resource room. This review began during the second baseline and guided notes phases.

Research using guided notes to teach employment applications to mildly handicapped juvenile delinquents was done by Virgalitte (1988). Her study compared the effects of guided notes and lecture-take note conditions on the employment application
completion performance of nine LD juvenile delinquents. Students took their own notes during baseline (lecture-take note) conditions. During guided notes conditions, students completed pre-made notes that followed along with the lecturer. Their performance was evaluated using daily 10-point quizzes and unit/posttests. Results of this reversal design, ABAB, showed that daily quiz performance and unit/posttest scores improved during guided notes conditions for all students.

Guided notes can provide students that lack effective and efficient notetaking skills a structured format, on which they can organize, record, and modify main ideas and key terms. Teachers using guided notes should "develop a format that corresponds with the structure and content of the course; parallels the sequence of the lecture; organizes information to facilitate notetaking, comprehension, and review; and assumes a structure that may be used consistently for every lecture" (Lazarus, 1988, p.33).

To maximize the effectiveness of guided notes, Lazarus (1988) suggests the following tips: (1) train students to use guided notes, (2) use an overhead projector, (3) evaluate guided notes, (4) encourage
students to review guided notes, (5) enlist the aid of the LD teacher, and (6) provide guided notes for all students.

Summary

Typically, students are expected to gain information from lectures and assigned readings. To do this, they must be able to recall and organize that information. Notetaking is a skill that enables students to do this. Research indicates that students who take and review notes have greater academic achievement and higher test scores than students who just listen to lectures.

Numerous notetaking strategies exist. Different types of advance organizers, completed note (lecture handouts), and personal notetaking formats have been proposed and researched. No one system of notetaking has proven to be the most effective. However, most researchers agree that notetaking is beneficial to students.

Some students, especially those with learning disabilities, lack the skills necessary to take "effective" notes. Typically, these are the students who lack organizational and study skills and exhibit deficits in listening and attending skills. Therefore,
these students are less likely to participate in class. Research suggests that academic learning is correlated to OTR/ASR.

These students need notetaking strategies that help them organize and record notes, as well as, promote OTR/ASR. Guided notes is one method that helps students follow a lecture, produce useful, organized notes, and actively participate in their learning. Guided notes can be thought of as a type of advance organizer that modifies instruction and adapts material. Recent research in the area of guided notes is encouraging. Studies have shown a positive relationship between the use of guided notes and students' increased quiz scores.

Research Questions

1. Will regular fifth grade students' scores on daily history quizzes increase as a function of using guided notes?

2. Will fifth grade LD students' scores on daily history quizzes increase as a function of using guided notes?

3. Will fifth grade gifted students' scores on daily history quizzes increase as a function of using guided notes?
4. Will the amount and quality of students' own notes increase after having used guided notes?

5. Will students prefer using guided notes or their own notes?
CHAPTER II

METHOD

This chapter describes the methods used to conduct the study. The following topics are addressed: subjects, setting, teacher, experimenter, definition and measurement of dependent variables, reliability of data, materials, experimental design, and procedures.

Subjects

The subjects were 20 fifth grade students: 11 boys and 9 girls ranging in age from 10-12 years. The class included two students enrolled in the school's program for specific learning disabilities (SLD), seven students enrolled in the school's program for the gifted and talented, and one Chapter One math student. See Table 1 for specific information on each student.

Permission slips, that included an explanation of the proposed research, were sent home to the parents or guardians of each student. (See Appendix A.) Permission was required before a student could participate in the study. Accompanying the permission slip was a letter from the students' regular fifth grade classroom teacher that, without detailing the
Table 1

Student Information.

<table>
<thead>
<tr>
<th>Student</th>
<th>Educational Placement</th>
<th>Sex</th>
<th>Verbal Aptitude</th>
</tr>
</thead>
<tbody>
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<td>M</td>
<td>30</td>
</tr>
<tr>
<td>2</td>
<td>SLD</td>
<td>M</td>
<td>26</td>
</tr>
<tr>
<td>3</td>
<td>G&amp;T</td>
<td>F</td>
<td>97</td>
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<tr>
<td>4</td>
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<td>76</td>
</tr>
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</table>

Notes.  a = Numbers in this column are national percentile scores for students in the same grade level on the Educational Records Bureau standardized test administered the previous school year.  b = national percentile scores for total reading achievement on the Comprehensive Tests of Basic Skills.  c = no standardized test scores available.
specifics of the study, described the social studies unit, the experimenter, and the importance notetaking skills play in the lives of their children. (See Appendix B.) The teacher and experimenter hoped the letter would dispel any reservations parents might have in permitting their children to take part in a study. Permission forms were signed and returned for all 20 students.

Setting

The study was conducted in a public elementary school fifth grade classroom located in a middle class suburban city school system. Students had their own desks and chairs, arranged in semicircular rows facing the front of the classroom. The study was conducted during the morning period social studies class that met for 30 minutes each school day. The students' regular classroom teacher presented the daily lectures and administered the daily quizzes.

Teacher

The regular classroom teacher was certified in the areas of English and Speech at the secondary level and elementary education at the primary and intermediate levels. Prior to teaching fifth grade, she had taught
English Composition for 11 years at the freshman college level, 4 years of high school English, and 4 years of junior high school English. At the time of the study, the teacher was in her 5th year of teaching at a fifth grade level.

**Experimenter**

The experimenter was a masters degree student majoring in Special Education at The Ohio State University. She was a full-time teacher of Specific Learning Disabled (SLD) students at the elementary school where the study took place. Her learning disabilities unit was a resource room for students from grades K-6 and was the only SLD unit at this particular school. Resource room students received instructional services as needed in the areas of math, language arts, and/or social skills. Students came to the resource room for a minimum of 30 minutes and a maximum of 4 hours per day.

The experimenter had 14 years of teaching experience with SLD students: grades K-3 for 4 years, grades 7-9 for 6 years, and grades K-6 for 4 years. The experimenter was in her 4th year of teaching at this elementary school.
Definition and Measurement of Dependent Variables

Two dependent variables were measured in this study: daily quiz scores, and the accuracy of students notes.

1. Daily quiz scores. Each daily quiz contained 10 items of five recall and five recognition questions. (See Appendix C.) Each daily quiz covered the material presented in the previous day's lecture. Daily quiz items were marked correct if they matched the answers on the answer key. Student responses spelled incorrectly were counted as correct as long as the misspelled word could be read as the correct response. One point was given for each item answered correctly. A student's daily quiz score was the total number of points earned on a quiz.

Record form for student quizzee

These forms were used by the experimenter to help keep track of students' quiz scores and to facilitate easier transfer of scores to the individual student graphs. A sample can be found in Appendix D.

2. Accuracy of notes. The percentage of concepts written was measured throughout the study. A concept/fact was defined as any word, phrase, or sentence expressing an idea that appeared beside a
capital or lower case letter, numeral, or dash.
Students' own notes were analyzed to measure the number of concepts/facts contained in their notes. Comparing the number of concepts/facts presented in daily lecture outlines to the number of concepts/facts contained in students' daily lecture notes provided a measurement of accuracy with regard to students' own notes. A percentage score was obtained by dividing the total number of concepts/facts contained in a lecture outline into the total number of concepts/facts contained in a student's daily lecture notes.

The percentage of accurately recorded concepts/facts on students' guided notes was also measured throughout the study. A copy of each set of guided notes was completed by the experimenter using the daily lecture outline as a reference. Each set of daily guided notes was analyzed to determine the number of items that were to be completed by students. Each blank space, next to lower case letters and numerals, and blank line was counted as an item to be completed. Students' guided notes were checked and the number of correctly completed items were counted. Comparing the number of items on guided notes completed by the experimenter to the number of items on guided notes
completed by students provided a measurement of accuracy with regard to students' guided notes. A percentage score was obtained by dividing the total number of items contained on experimenter completed guided notes into the total number of correctly completed items contained in a student's set of completed guided notes.

Record form for student concepts

These forms were maintained by the experimenter to keep track of the number of concepts written by students when taking their own notes or when using guided notes. A sample form can be found in Appendix E.

Reliability of data

Interobserver agreement data was computed during each of the studies six phases: three baseline and three intervention. Another teacher was trained to independently score student daily quizzes, and lecture notes for the number of concepts written. The second observer used the same answer key and scoring guidelines used by the experimenter to score the students' quizzes and notes.

Six students were chosen for reliability checks throughout the study. Of these six students, two were
learning disabled, two were gifted and talented, and two were regular fifth grade students.

An item-by-item comparison between the experimenter and the second observer scoring was done to determine the number of disagreements. Interobserver agreement was calculated by using the following formula:

\[
\frac{\text{agreements}}{\text{agreements} + \text{disagreements}} \times 100 = \% \]

Reliability for items answered correctly on daily quizzes was obtained by having the trained observer score copies of students' quizzes. Copies were made to avoid bias on the part of the second observer, since the original quizzes had already been marked by the experimenter. The trained teacher was asked to mark the incorrect answers and write the total number correct at the top.

Reliability for the number of concepts written by students when taking their own notes was obtained by having the second observer count each lecture concept written by these students. The second observer recorded the total number of concepts for each student
onto a data sheet (see Appendix E) like the one used by the experimenter.

**Materials**

1. **Lecture outlines.** A lecture outline was prepared by the experimenter for each session of the study. Lecture outlines contained the facts/concepts presented during the social studies instruction session. A sample lecture outline can be found in Appendix F.

2. **Guided notes.** Guided notes were structured outlines of notes provided to the students during certain phases of the study. Guided notes paralleled the lecture outline and were to be completed by the student as the teacher lectured. Guided notes were two pages in length and were placed in the front of each student's notebook before each social studies session. A sample guided note can be found in Appendix G.

3. **Instructional Transparency.** The instructional transparency was used by the classroom teacher on the day before the first day of the first guided notes phase. The teacher used it to teach students how to use guided notes. A Copy of the instructional transparency can be found in Appendix H.
4. **Three-ring notebooks.** Each student was provided with a 3-ring notebook containing loose-leaf, lined notebook paper. During baseline phases, students were to take notes on the paper provided in their notebooks. During intervention phases (guided notes), students were to complete the guided notes provided for them in their notebooks. All students’ own notes and guided notes were kept in these notebooks. Inside the front cover of each notebook was a library pocket containing a 3 x 5 inch index card with the student’s name.

5. **Notebook checkout chart.** A notebook checkout chart was hung in the classroom next to the public posting chart. It was used to keep track of notebooks that were checked out by students to be taken home. Twenty library pockets, each with a student’s name, were glued to the chart. Any student wishing to checkout a notebook for the evening could do so by placing the 3x5 index card with his name into the pocket on the chart containing his name. A diagram of the notebook checkout chart can be found in Appendix 1.

6. **Public posting chart.** A public posting chart was hung on the classroom wall. This chart kept a record of all students scores on the daily quizzes.
Each day the experimenter recorded students' scores on this chart. A facsimile of the chart can be found in Appendix J.

7. Social Studies Content. Instructional sessions covered: explorers and new lands, settling America, the Revolutionary War, creating our nation's government, Civil War, and rebuilding our nation. All of the content included in the lecture notes and quizzes was provided to the experimenter by the teacher. No specific textbook was used. The teacher had compiled the information from various sources.

**Experimental Design**

A reversal design was used to evaluate the effects of guided notes on daily quiz scores. This design was chosen because of its strength in showing functional relationships and its practical suitability to the present study.

An initial baseline phase was conducted to determine the level of behavior prior to intervention. Correct student responses on the daily 10-item quizzes were plotted upon students' own notes. The prediction was that without intervention, the level of behavior would remain the same. Nine initial baseline sessions were conducted. Guided notes were then introduced and
used during instruction for nine sessions. Baseline
conditions (students taking their own notes) were
reinstated for five sessions, followed by guided notes
(9 sessions), baseline (5 sessions), and a final guided
notes phase (9 sessions).

Procedure

General Procedures.

The study was conducted in 48 daily sessions. An
attempt was made to control the material presented to
students from session to session in terms of amount and
level of difficulty. Each session lasted 30 minutes
and was divided into three parts: lecture, review, and
daily quiz. Lectures lasted approximately 15 minutes,
reviews took 5 minutes, and administering the quizzes
took about 10 minutes.

The experimenter prepared for each session by
supplying the regular classroom teacher with a lecture
outline (at least one day in advance) and the daily
quiz. Student notebooks were handed out by two weekly
appointed students right before each session was to
begin. During intervention phases, guided notes that
accompanied each lecture were prepared by the
experimenter and placed inside the front of each
notebook.
On the day prior to the onset of data collection, the teacher told the students about the next major topic they would be studying in social studies. She briefly discussed with them how this social studies study would differ from other studies they had done in the past by explaining the following points: (a) All students would be provided with a 3-ring notebook containing notebook paper to assist them in keeping all their materials organized and in one location, (b) Any notes students wanted to take needed to be written on the pages provided in their notebooks, (c) All handouts were to be kept in their notebooks, (d) All notes and guided notes were to be dated each day, (e) Notebooks were to be kept in a box at the back of the classroom and would be distributed daily right before each session began, (f) The daily schedule of each social studies session was discussed, (g) Student quiz scores would be posted each morning on the public posting chart, (h) Quizzes would not be handed back, but answers would be gone over immediately following their completion, (i) Notebooks could be checked out by students, but had to be returned by the following morning.
Prior to the first day of guided notes, the classroom teacher taught students how to use guided notes by presenting a lesson on how to make chocolate pudding. Students were given one page of guided notes that went along with the teacher’s lecture. This particular lecture guide was in the form of one instructional transparency. As the teacher discussed making chocolate pudding she progressively disclosed information on the transparency. The teacher and students filled in the guided notes together. After the teacher had completed an item on the transparency, she would walk among the students making sure they were appropriately completing that same item on their guided notes.

**Baseline I.**

This phase consisted of students taking their own notes in the 3-ring notebooks they were provided with. Each instructional session was divided into three parts: lecture, review, and daily quiz. Just before the session began, two students handed out the notebooks. The classroom teacher followed the daily lecture outline and presented information to the students using a lecture-type procedure. While the teacher lectured, students took their own notes.
Students were not explicitly asked or told to take notes. They were only reminded that any notes they wanted to take had to be written in their notebooks. Each lecture lasted approximately 15 minutes.

Immediately following the lecture, the teacher reviewed the material just presented for approximately 3 minutes. The teacher reviewed main points of the lecture and answered any student questions. Students were then told to take a few minutes and look over their notes to prepare for the quiz. Part two took about five minutes.

Each session ended with administration of the daily quiz. Before the quizzes were handed out the students were asked to close their notebooks. When all quizzes were completed, they were collected and the questions and answers were reviewed orally. Baseline 1 was conducted for nine sessions. All quizzes were graded by the experimenter and scores were posted each morning before school began on a public posting chart. Quiz scores were commented on by the classroom teacher at the beginning of each social studies period and prior to the presentation of new material.
Guided Notes 1.

This phase consisted of students using guided notes. Basically, the same procedure was followed as during the baseline (the students' own notes) condition except that students were provided with a set of guided notes in their notebooks. These guided notes were similar to the lecture outline used by the classroom teacher. As the material was presented, the students filled in the guided notes. In this way, students were actively involved in taking notes, were provided with a standard notetaking format, and were kept focused-in on the material presented.

After the material was presented, the teacher conducted a brief review of the important points and allowed students a few minutes to look over their guided notes. The review and study period lasted for 5 minutes. At the conclusion of the review, students closed their notebooks and the daily quiz was administered. Upon completion of the quiz, questions and answers were gone over orally.

This condition lasted for nine sessions. Quizzes were scored and posted on the chart by the experimenter each morning before school began.
Baseline 2.

Baseline 2 lasted five days and consisted of the same procedure as baseline 1 with regard to the session being divided into three parts. However, the order of these parts was changed. Now the first part of the session consisted of the teacher conducting a review of the material presented during the previous session, still allowing the students a few minutes to look over their notes before the quiz. This part lasted 5 minutes. The second part of the session was the administration of the daily quiz. When the quizzes were completed, they were collected and the questions and answers were reviewed orally. The quiz and review of it lasted 10 minutes. The third part of the session was the presentation of new material by the classroom teacher using the lecture outline. Students could take their own notes while the information was presented if they chose to do so.

Two changes in general procedure were begun during this phase with the two students who were learning disabled. First, each morning the experimenter conducted a special review session with the two SLD students while they were in the learning disabilities resource room. The review sessions were held each morning between
8:40-9:00 and lasted approximately 20 minutes. During this time, the experimenter reviewed with the students the notes they had taken from the previous day's lecture. If the students had no notes, the experimenter would ask the students what they could tell her about the previous day's lecture. No information regarding the lecture was given to the students other than what they said or had in their own notes.

The second change for the learning disabled students involved a modified testing procedure. As soon as the quizzes were handed out, these two students took their quizzes into the hall and sat down at a table with the experimenter. The experimenter read each question to the students. Students were able to ask for clarification or could have questions and answer choices repeated. When they had finished, the experimenter reminded these students to check over their answers. After they had done this, the two students returned to the social studies classroom, handed in their quizzes, and took part in the oral review of quiz questions and answers.

Students wrote their own notes in the notebooks provided just as they had done during Baseline 1.
However, before Baseline 2 began, the experimenter had removed all notes, both the students' own and guided notes for all previous sessions.

Guided Notes 2.

Guided Notes 2 was conducted exactly as Baseline 2 except that students used guided notes instead of writing their own notes. Guided notes were placed in each student's notebook before the sessions began. Also during the special review session for the two learning disabled students, their guided notes were used. Guided Notes 2 lasted nine sessions.

Baseline 3.

Procedures during this final baseline phase were exactly as in Baseline 2. This phase lasted five sessions. Once again, before the next two phases, Baseline 3 and Guided Notes 3, the experimenter removed all students' own notes and guided notes for Baseline 2 and Guided Notes 2.

Guided Notes 3.

Guided Notes 3 was presented exactly as Guided Notes 2.
Student Opinion

Social Validity was measured through two methods. The first method was a questionnaire given to each student at the end of the study. (See Appendix K.) Students were asked to complete it by writing their answers to the questions. Students were also interviewed at the conclusion of the study. (See Appendix L.) Interviews were conducted by the resource room aide. All students were interviewed to determine their opinions regarding the use of guided notes. The interviews were informal so that students would feel comfortable about expressing their true feelings. As the students answered questions posed by the aide, the aide wrote down their responses.
CHAPTER III

RESULTS

This chapter reports the results of the study. Data are presented for each student's performance on daily quizzes and accuracy of each student's notes during baseline and guided notes phases. Interobserver agreement is also presented for the scoring of quizzes and students' notes.

Interobserver Agreement Data

Daily Quizzes

Table 2 shows the interobserver agreement data for six students with regard to daily quiz performance. Agreement percentages during baseline phases ranged across the six students from 92 to 97% with a mean of 94%. Agreement percentages during guided notes phases ranged across students from 97 to 100% with a mean of 98%. The overall interobserver agreement percentages for both phases averaged 96%.

Accuracy of Notes

Table 3 shows the interobserver agreement data for the same six students with regard to the accuracy of notes taken by students during baseline and guided note
Table 2

Mean interobserver agreement percentages on daily quiz scores.

<table>
<thead>
<tr>
<th>Student</th>
<th>Baseline (6)</th>
<th>Guided Notes (6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SLD</td>
<td></td>
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</tr>
<tr>
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<td>97</td>
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<tr>
<td>2</td>
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<td>98</td>
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<tr>
<td>G&amp;T</td>
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<td>3</td>
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<td>100</td>
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</tr>
<tr>
<td>Mean</td>
<td>94</td>
<td>98</td>
</tr>
</tbody>
</table>

Note. Number in parentheses indicates the number of quizzes on which the agreement percentages are based.
Table 3

Mean Interobserver Agreement Percentages on Accuracy of Students' Notes.

<table>
<thead>
<tr>
<th>Student</th>
<th>Baseline (6)</th>
<th>Guided Notes (6)</th>
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</thead>
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<td>2</td>
<td>97</td>
<td>98</td>
</tr>
<tr>
<td>G&amp;T</td>
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<td>99</td>
</tr>
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<td>98</td>
</tr>
<tr>
<td>11</td>
<td>94</td>
<td>100</td>
</tr>
</tbody>
</table>

Range    | 94-98        | 98-100           |
Mean     | 96           | 99               |

Note. Number in parentheses indicates number of sessions in which notes were checked by interobserver.
phases. Agreement percentages during baseline phases ranged across students from 94 to 98% with a mean of 96%. Agreement percentages during guided notes ranged across students from 98 to 100% with a mean of 99%.

Daily Quiz Scores

A daily 10 point quiz was administered to each student after each session. During Baseline 1 and Guided Notes 1, the quiz was administered on the same day immediately following the lecture. During the remainder of the study (Quizzes 19-46) the quizzes were administered on the next school day following the lecture.

Student 1

Figure 1 shows the daily quiz scores for Student 1. During Baseline 1, Student 1 averaged 3.1 correct responses with a daily range of 1-5. The average number of correct responses during Guided Notes 1 was 5.2 with a range of 3-7. During Baselines 2 and 3, Student 1 averaged 7.2 and 5.8 correct responses respectively. His average scores during Guided Notes 2 and 3 were 9.5 and 9.4 respectively. On no daily quiz during the final two Guided Notes phases did Student 1 score less than 9. The mean for the three combined baselines was 5.3. The three combined Guided Notes
Figure 1. Number of items answered correctly by Student 1 on daily quizzes during baseline (students' own notes) and guided notes conditions.
phases yielded a mean of 8.0.

**Student 2**

Figure 2 shows the daily quiz scores for Student 2. During Baseline 1, Student 2 averaged 3.2 correct responses with a daily range of 0-5. The average number of correct responses during Guided Notes 1 was 4.8 with a range of 3-7. During Baselines 2 and 3, Student 2 averaged 7.6 and 5.2 correct responses respectively. His average scores during Guided Notes 2 and 3 were 9 and 9.4 respectively. On no daily quiz during the final two Guided Notes phases did Student 2 score less than 8. The mean for the three combined baselines was 5.3. The three combined Guided Notes phases yielded a mean of 7.7.

**Student 3**

Figure 3 shows the daily quiz scores for Student 3. During Baseline 1, Student 3 averaged 8.7 correct responses with a daily range of 7-10. The average number of correct responses during Guided Notes 1 was 9.6 with a range of 8-10. During Baselines 2 and 3, Student 3 averaged 9 and 9.2 correct responses respectively. Her average scores during Guided Notes 2 and 3 were 10 and 9.5 respectively. During Guided Notes 2, Student 3 scored a perfect score of 10 on all
Figure 2. Number of items answered correctly by Student 2 on daily quizzes during baseline (students' own notes) and guided notes conditions.
Figure 3. Number of items answered correctly by Student 3 on daily quizzes during baseline (students' own notes) and guided notes conditions.
9 daily quizzes. On only two occasions during Guided Notes 3 did Student 3 score below 10 (both those scores were 8). The mean for the three combined baselines was 9.0. The three combined Guided Notes phases yielded a mean of 9.7.

Student 4

Figure 4 shows the daily quiz scores for Student 4. During Baseline 1, Student 4 averaged 9.2 correct responses with a daily range of 8-10. The average number of correct responses during Guided Notes 1 was 9.6 with a range of 8-10. During Baselines 2 and 3, Student 4 averaged 9.2 and 9.3 correct responses respectively. His average scores during Guided Notes 2 and 3 were 9.8 and 9.6 respectively. On no daily quiz during the final two Guided Notes phases did Student 4 score less than 9. The mean for the three combined baselines was 9.2. The three combined Guided Notes phases yielded a mean of 9.6.

Student 5

Figure 5 shows the daily quiz scores for Student 5. During Baseline 1, Student 5 averaged 8.2 correct responses with a daily range of 4-10. The average number of correct responses during Guided Notes 1 was 8.3 with a range of 8-9. During Baselines 2 and 3,
Figure 4. Number of items answered correctly by Student 4 on daily quizzes during baseline (students' own notes) and guided notes conditions.
Figure 5. Number of items answered correctly by Student 5 on daily quizzes during baseline (students' own notes) and guided notes conditions.
Student 5 averaged 6.0 and 7.0 correct responses respectively. His average scores during Guided Notes 2 and 3 were 8.6 and 9.4 of respectively. The mean for the three combined baselines was 7.0. The three combined Guided Notes phases yielded a mean of 8.8.

**Student 6**

Figure 6 shows the daily quiz scores for Student 6. During Baseline 1, Student 6 averaged 8.6 correct responses with a daily range of 7-10. The average number of correct responses during Guided Notes 1 was 8.6 with a range of 8-10. During Baselines 2 and 3, Student 6 averaged 5 and 8.2 correct responses respectively. His average scores during Guided Notes 2 and 3 were 9.2 and 8.2 of respectively. The mean for the three combined baselines was 7.6. The three combined Guided Notes phases yielded a mean of 8.7.

**Student 7**

Figure 7 shows the daily quiz scores for Student 7. During Baseline 1, Student 7 averaged 8.8 correct responses with a daily range of 6-10. The average number of correct responses during Guided Notes 1 was 9.8 with a range of 9-10. No Baseline 2 scores were obtained due to absence. During Baseline 3, Student 7 averaged 8.0 correct responses. Her average score
Figure 6. Number of items answered correctly by Student 6 on daily quizzes during baseline (students' own notes) and guided notes conditions.
Figure 7. Number of items answered correctly by Student 7 on daily quizzes during baseline (students' own notes) and guided notes conditions.
during both Guided Notes 2 and 3 was 9.4. On only two occasions during the final two Guided Notes phases did Student 7 score less than 9 (7 and 8). The mean for the two combined baselines was 8.4. The three combined Guided Notes phases yielded a mean of 9.5.

**Student 8**

Figure 8 shows the daily quiz scores for Student 8. During Baseline 1, Student 8 averaged 8.2 correct responses with a daily range of 6-10. The average number of correct responses during Guided Notes 1 was 9.0 with a range of 7-10. During Baselines 2 and 3, Student 8 averaged 8.6 and 8.2 correct responses respectively. His average scores during Guided Notes 2 and 3 were 8.6 and 8.3 respectively. The mean for the three combined baselines was 8.3. The three combined Guided Notes phases yielded a mean of 8.6.

**Student 9**

Figure 9 shows the daily quiz scores for Student 9. During Baseline 1, Student 9 averaged 8.8 correct responses with a daily range of 5-10. The average number of correct responses during Guided Notes 1 was 9.5 with a range of 7-10. During Baselines 2 and 3, Student 9 averaged 8.6 and 8.2 correct responses respectively. His average scores during Guided Notes 2
Figure 8. Number of items answered correctly by Student 8 on daily quizzes during baseline (students' own notes) and guided notes conditions.
Figure 9. Number of items answered correctly by Student 9 on daily quizzes during baseline (students' own notes) and guided notes conditions.
and 3 were 9.2 and 9.3 respectively. On only two occasions during Guided Notes 2 did Student 9 score less than 9 (7 and 8). No score during Guided Notes 3 was less than 9. The mean for the three combined baselines was 8.5. The three combined Guided Notes phases yielded a mean of 9.3.

**Student 10**

Figure 10 shows the daily quiz scores for Student 10. During Baseline 1, Student 10 averaged 8.6 correct responses with a daily range of 7-10. The average number of correct responses during Guided Notes 1 was 9.0 with a range of 7-10. During Baselines 2 and 3, Student 10 averaged 7.8 and 7.0 correct responses respectively. His average scores during Guided Notes 2 and 3 were 8.7 and 8.8 respectively. The mean for the three combined baselines was 7.8. The three combined Guided Notes phases yielded a mean of 8.8.

**Student 11**

Figure 11 shows the daily quiz scores for Student 11. During Baseline 1, Student 11 averaged 5.1 correct responses with a daily range of 2-8. The average number of correct responses during Guided Notes 1 was 7.0 with a range of 4-8. During Baselines 2 and 3, Student 11 averaged 6.0 and 5.4 correct responses
Figure 10. Number of items answered correctly by Student 10 on daily quizzes during baseline (students' own notes) and guided notes conditions.
Figure 11. Number of items answered correctly by Student 11 on daily quizzes during baseline (students' own notes) and guided notes conditions.
respectively. Her average scores during Guided Notes 2 and 3 were 6.2 and 7.6 respectively. The mean for the three combined baselines was 5.5. The three combined Guided Notes phases yielded a mean of 6.9.

**Student 12**

Figure 12 shows the daily quiz scores for Student 12. During Baseline 1, Student 12 averaged 5.6 correct responses with a daily range of 3-9. The average number of correct responses during Guided Notes 1 was 7.1 with a range of 4-9. During Baselines 2 and 3, Student 12 averaged 6.2 and 3.6 correct responses respectively. His average scores during Guided Notes 2 and 3 were 6.2 and 5.8 respectively. The mean for the three combined baselines was 5.1. The three combined Guided Notes phases yielded a mean of 6.3.

**Student 13**

Figure 13 shows the daily quiz scores for Student 13. During Baseline 1, Student 13 averaged 7.2 correct responses with a daily range of 4-9. The average number of correct responses during Guided Notes 1 was 8.8 with a range of 7-10. During Baselines 2 and 3, Student 13 averaged 7.2 and 5.8 correct responses respectively. Her average scores during Guided Notes 2 and 3 were 8.8 and 7.6 respectively. The mean for the
Figure 12. Number of items answered correctly by Student 12 on daily quizzes during baseline (students' own notes) and guided notes conditions.
Figure 13. Number of items answered correctly by Student 13 on daily quizzes during baseline (students' own notes) and guided notes conditions.
three combined baselines was 6.6. The three combined Guided Notes phases yielded a mean of 8.0.

**Student 14**

Figure 14 shows the daily quiz scores for Student 14. During Baseline 1, Student 14 averaged 8.0 correct responses with a daily range of 6-9. The average number of correct responses during Guided Notes 1 was 8.8 with a range of 7-10. During Baselines 2 and 3, Student 14 averaged 7.6 and 6.6 correct responses respectively. Her average scores during Guided Notes 2 and 3 were 8.4 and 9.2 respectively. On only one occasion during the final two Guided Notes phases did Student 14 score less than 8. The mean for the three combined baselines was 7.4. The three combined Guided Notes phases yielded a mean of 8.8.

**Student 15**

Figure 15 shows the daily quiz scores for Student 15. During Baseline 1, Student 15 averaged 8.2 correct responses with a daily range of 6-10. The average number of correct responses during Guided Notes 1 was 8.5 with a range of 7-10. During Baselines 2 and 3, Student 15 averaged 6.6 and 9.0 correct responses respectively. Her average scores during Guided Notes 2 and 3 were 9.0 and 9.8 respectively. On no daily quiz
Figure 14. Number of items answered correctly by Student 14 on daily quizzes during baseline (students' own notes) and guided notes conditions.
Figure 15. Number of items answered correctly by Student 15 on daily quizzes during baseline (students' own notes) and guided notes conditions.
during the final two Guided Notes phases did Student 15 score less than 8. The mean for the three combined baselines was 7.9. The three combined Guided Notes phases yielded a mean of 9.1.

**Student 16**

Figure 16 shows the daily quiz scores for Student 16. During Baseline 1, Student 16 averaged 4.8 correct responses with a daily range of 1-8. The average number of correct responses during Guided Notes 1 was 8.5 with a range of 7-10. During Baselines 2 and 3, Student 16 averaged 7.6 and 6.4 correct responses respectively. Her average scores during Guided Notes 2 and 3 were 8.8 and 8.0 respectively. The mean for the three combined baselines was 6.6. The three combined Guided Notes phases yielded a mean of 8.4.

**Student 17**

Figure 17 shows the daily quiz scores for Student 17. During Baseline 1, Student 17 averaged 4.6 correct responses with a daily range of 1-7. The average number of correct responses during Guided Notes 1 was 7.1 with a range of 5-9. During Baselines 2 and 3, Student 17 averaged 5.2 and 3.8 correct responses respectively. Her average scores during Guided Notes 2 and 3 were 7.2 and 5.8 respectively. The mean for the
Figure 16. Number of items answered correctly by Student 16 on daily quizzes during baseline (students' own notes) and guided notes conditions.
Figure 17. Number of items answered correctly by Student 17 on daily quizzes during baseline (students' own notes) and guided notes conditions.
three combined baselines was 4.5. The three combined Guided Notes phases yielded a mean of 6.7.

**Student 18**

Figure 18 shows the daily quiz scores for Student 18. During Baseline 1, Student 18 averaged 6.2 correct responses with a daily range of 3-9. The average number of correct responses during Guided Notes 1 was 8.6 with a range of 7-9. During Baselines 2 and 3, Student 18 averaged 7.0 and 5.0 correct responses respectively. His average scores during Guided Notes 2 and 3 were 8.2 and 8.4 respectively. The mean for the three combined baselines was 6.0. The three combined Guided Notes phases yielded a mean of 8.4.

**Student 19**

Figure 19 shows the daily quiz scores for Student 19. During Baseline 1, Student 19 averaged 7.8 correct responses with a daily range of 5-9. The average number of correct responses during Guided Notes 1 was 9 with a range of 7-10. During Baselines 2 and 3, Student 19 averaged 7.2 and 7.3 correct responses respectively. Her average scores during Guided Notes 2 and 3 were 8.8 and 7.2 respectively. The mean for the three combined baselines was 7.4. The three combined Guided Notes phases yielded a mean of 8.3.
Figure 18. Number of items answered correctly by Student 18 on daily quizzes during baseline (students' own notes) and guided notes conditions.
Figure 19. Number of items answered correctly by Student 19 on daily quizzes during baseline (students' own notes) and guided notes conditions.
Student 20

Figure 20 shows the daily quiz scores for Student 20. During Baseline 1, Student 20 averaged 7.0 correct responses with a daily range of 3-10. The average number of correct responses during Guided Notes 1 was 8.2 with a range of 7-9. During Baselines 2 and 3, Student 20 averaged 8.0 and 7.2 correct responses respectively. His average scores during Guided Notes 2 and 3 were 8.8 and 9.0 respectively. On only two occasions during the final two Guided Notes phases did Student 20 score less than 8. The mean for the three combined baselines was 7.4. The three combined Guided Notes phases yielded a mean of 8.6.

Group Summary

Table 4 shows the mean daily quiz scores for each student during each phase of the study. It also shows the range across students and group mean for each phase of the study.

Quiz scores of the two learning disabled students were significantly lower during baseline phases as compared to their scores during guided notes phases. Baseline phase mean scores ranged across these students from 3.1 to 7.6. Guided notes phase mean scores ranged from 4.8 to 9.6. The mean score for the three combined
Figure 20. Number of items answered correctly by Student 20 on daily quizzes during baseline (students' own notes) and guided notes conditions.
Table 4

Mean Daily Quiz Scores for Each Student by Phases.

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<thead>
<tr>
<th>Student</th>
<th>BL 1(9)</th>
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<tr>
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</table>

Notes. GN = Guided Notes. BL = Baseline. Number in parentheses indicates the number of daily quizzes in each phase. Abs = student absent for entire phase. No scores available.
baseline phases of these LD students was 5.4. The combined guided notes phases produced a mean score of 7.8.

Gifted students' quiz scores also showed improvement during guided notes phases as compared to baseline phases. Mean quiz scores ranged from 5 to 9.3 during baseline phases and from 8.2 to 10 during guided notes phases. The mean score for the combined baseline phases was 8.2 for these gifted students. Combined guided notes phases produced a mean score of 9.2.

Quiz scores of the regular students were also generally higher during guided notes phases than during baseline phases. Mean phase scores ranged from 3.6 to 9 during baseline phases and from 5.7 to 9.8 during guided notes phases. The mean score was 6.6 for the combined baseline phases. The combined guided notes phases produced a mean score of 8.0.

Table 5 shows the overall mean score for each student in Baselines 2 and 3 and Guided Notes 2 and 3 combined. During these four phases, all quizzes were given the next day following a session. This comparison shows that the mean quiz scores during Guided Notes phases was higher for all 20 students (except Student 8) than during baseline phases. Mean
Table 5

Combined Mean Quiz Scores for Baselines 2 and 3 and Guided Notes 2 and 3.

<table>
<thead>
<tr>
<th>Student</th>
<th>Baselines 2 and 3 (10)</th>
<th>Guided Notes 2 and 3 (18)</th>
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</thead>
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<td>Class Mean</td>
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</table>

Note. Number in parentheses indicates the number of combined lecture notes scored.
quiz scores during Baselines 2 and 3 were 7.3 and 6.7 respectively. Mean quiz scores during Guided Notes 2 and 3 were 8.6 and 8.4 respectively. The combined baseline mean was 7.0; the combined Guided Notes mean was 8.6.

**Accuracy of Students’ Notes**

Students’ own notes (baseline phases) and students’ guided notes were analyzed for the purpose of measuring the accuracy of notes taken by the students. Two lecture day notes per student were chosen to be analyzed and scored during each phase of the study: A total of 12 session notes per student (6 baseline and 6 lecture day guided notes) were scored. Tables 6 and 7 show the results of this assessment.

**Students' Own Notes**

Students' daily lecture notes were analyzed and compared to the teacher's daily lecture outline. Each lecture outline had been analyzed to determine the number of concepts/facts presented.

Percentages of accurately recorded concepts/facts on students' notes for all three combined baseline phases ranged across students from 14 to 61% with a mean of 34%.
Table 6

Mean Percentage of Accurately Recorded Concepts/Facts on Students’ Notes.

<table>
<thead>
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<th>Student</th>
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<th>GN 1(2)</th>
<th>BL 2(2)</th>
<th>GN 2(2)</th>
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Class Range  2-69  61-100  16-72  86-100  1-53  90-100
Class Mean   34      95      44      96      26      96

Notes.  GN = Guided Notes.  BL = Baseline.  Number in parentheses indicates the number of lecture notes analyzed.  Abs = student absent for entire phase.  No scores available.
Table 7

Accuracy of Students' Notes During Baseline and Guided Notes Conditions.

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</table>

Range 14-61 87-100

Class Mean 34 96

Notes. Number in parentheses indicates the number of lecture notes analyzed.
Guided Notes

Students' daily guided notes were checked and compared to the teacher's daily lecture outline and teacher's copy of completed guided notes.

The mean percentage of concepts/facts on the accurately recorded guided notes for all three combined Guided Notes phases ranged across students from 87 to 100% with a mean of 96%.

Students' Opinions About Guided Notes

Two methods were used to assess the students' opinions with regard to using guided notes and their own notes. A written questionnaire was given to each student on which they responded to 10 questions by writing their own answers or choosing from a pair of answers. The second method used was an informal interview conducted by an independent trained teacher. All 20 students were interviewed by this independent teacher.

Written Questionnaire

Table 8 shows results of the student questionnaire. Even though all the students did not prefer using guided notes, all 20 students agreed that they learned more and obtained better quiz scores when they used guided notes.
Table 8

*Student Opinions of Notetaking Methods.*

<table>
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<th>Condition</th>
<th>Own Notes</th>
<th>Guided Notes</th>
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<td>10</td>
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<tr>
<td>Best quiz scores</td>
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<td>20</td>
</tr>
<tr>
<td>Learned more</td>
<td>0</td>
<td>20</td>
</tr>
<tr>
<td>Easier to study</td>
<td>3</td>
<td>17</td>
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<tr>
<td>Easier to take</td>
<td>9</td>
<td>11</td>
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</table>
Students had varying responses to the question regarding what they liked about using guided notes: They knew exactly what information was considered important and it was easier to fill in missing information; Guided notes helped them learn more and gave them better quiz scores; Guided notes helped them to better organize the material. Students disliked guided notes because they took longer to complete and you had to wait for others to complete their notes; there was not enough room to doodle; they were somewhat confusing when they missed getting down some of the information; they were boring; you had to listen to the lecture.

Student responses to what they liked about taking their own notes also varied: they could write whatever they wanted to; they had lots of room to doodle; they were under less pressure to listen to the lecture to get the information. When asked what they disliked about taking their own notes, students thought it was harder because they were not sure what was the important information to record; there was too much to write; their own notes were not as easy to study; they did not pay as much attention to the lecture when taking their own notes; two they did not learn as much.
Informal Interview

Fourteen students preferred using guided notes because they got the important information from the lecture and received better quiz scores. Six students preferred their own notes because they were free to write down whatever they wanted. The same 14 students that preferred using guided notes also found them to be easier than taking their own notes because there was less to write and they could pay more attention to the lecture. The same six students that preferred taking their own notes thought taking their own notes was easier because they did not have to pay as much attention to the lecture. When asked what students liked most about using guided notes, the general consensus was that they were sure about getting down the right information. The general complaints about using guided notes were narrowed down to three: There was not enough doodle space, took too long to complete because you really had to follow along, and you could not write what you wanted to. All students agreed that what they like most about taking their own notes was the ability to write down whatever they wanted to, including doodles. Missing important information during the lecture and writing too much were the two
things the students did not like about taking their own notes.

In general, most of the comments from the students about using the guided notes were positive. They felt they earned better quiz scores, would like to use them again and in other subjects, learned a lot about the subject matter, and felt it was important to learn things using different methods.
CHAPTER IV
DISCUSSION

This chapter discusses the results of the study comparing the effects of using guided notes to students' own notes during large group social studies instruction. First the results will be discussed relative to each of the research questions. Then limitations of the study, implications for classroom teaching, and suggestions for further research will be presented.

Effects on Daily Quiz Scores

Performance on daily quiz scores was used as the primary indicator of academic achievement by the students. As in the Kline (1986) study, significant improvements were made in the daily quiz scores of students using guided notes.

Regular Fifth-Grade Students

Analysis of quiz score data shows that guided notes produced higher quiz scores than when students took their own notes. All 11 of the regular fifth-grade students participating in the study produced higher overall quiz scores during the Guided
Notes phases. During Guided Notes phases 2 and 3, the average daily mean quiz score for the 11 regular fifth-grade students was 86% as compared to the average daily mean quiz score of 64% during the phases when students took their own notes. Based on the widely used grading scale of assigning letter grades within intervals of 10%, these scores translate to a 2-letter grade increase, from D to B, when using guided notes. It is evident that with a 16% increase (and 2-letter grades), guided notes helped these students recall more information.

**Students with Specific Learning Disabilities**

Examination of the quiz score data of these two students shows that guided notes were responsible for producing higher quiz scores than students’ own notes. Both SLD students showed increased quiz performance from Baseline to Guided Notes conditions, especially during Guided Notes 2 and 3. This may have been due, at least in part, to a procedural change that went into effect the first day of Baseline 2. That change consisted of a 20-minute special review session held each morning (8:40 - 9:00) and was led by the experimenter. This review session helped the SLD
students by reviewing their notes (guided or students' own) from the previous day's material.

Mean quiz scores for both Baselines 2 and 3 were 64% and 93% for both Guided Notes 2 and 3; an increase of 29%. Using a 10 point grading scale, this means the difference between a D and an A. It is quite evident that guided notes significantly increased these students' ability to recall information.

**Gifted and Talented Students**

An analysis of the quiz score data of these students also shows that guided notes produced higher quiz scores than students' own notes. All seven gifted fifth-grade students participating in this study showed overall increased quiz performance when using guided notes.

The average daily mean score for all seven students was 92% during Guided Notes 2 and 3 compared to an average mean score of 84% during Baselines 2 and 3. Utilizing a 10 point grading scale, these scores represent a difference between an A and a B. A review of these students' quiz scores during baseline phases shows that they do well using their own notes. However, it is evident that during intervention phases
these students performed even better when using guided notes.

Effects on Students' Notetaking

An analysis of the students' own notes and their guided notes for the purpose of measuring the accuracy of notes taken by the students was calculated. Analysis of this data shows that students' own notes, taken during baseline phases, contained 34% of the concepts/facts presented. This figure may be somewhat low since students were not required to take notes during baseline phases. On certain days some students took very sketchy notes or none at all.

Students' guided notes contained 96% of the concepts/facts presented. This figure may be higher since students were provided with an organized, structured format highlighting key points. This 62% increase of accurately recorded concepts/facts may have influenced the students' recall of lecture information as demonstrated by their improved daily quiz scores during Guided Notes phases. Earlier research by Fisher and Harris (1974) indicate that a positive relationship exists between the amount of detail in students' notes and their scores on subsequent tests.
The 62% increase of recorded concepts/facts that was realized while utilizing guided notes also indicates increased levels of ASR/OTR. The increased OTR/ASR may also be responsible for improvements in the students’ academic achievement (Greenwood et al., 1984).

Students’ Opinions About Guided Notes

All 20 students were given a written questionnaire that surveyed their opinions with regard to guided notes. Half of the students preferred using guided notes and the other half indicated they preferred taking their own notes. However, all 20 students felt that guided notes aided them in retaining more information and getting higher quiz scores. Of the 10 who preferred taking their own notes, 5 preferred them because they could take notes when they wanted to, plus their own paper provided them with more “doodle” space. The other 5 preferred their own notes over guided notes because guided notes “make you write too much and you have to really pay attention to the teacher”.

All 20 students were also interviewed by the experimenter’s classroom aide. Of these 20 students, 14 felt guided notes afforded them the opportunity to get all the important information down, as well as, being able to pay closer attention to the lecture.
because they had less to write down. The other 6 preferred their own notes because they were free to write down whatever they wanted and did not have to pay as much attention to the lecture.

In general, comments made by students during class to one another or to the teacher or experimenter were positive. A return to baseline often brought on groans of dismay from some students, while others showed delight. A return to guided notes brought on sighs of relief by many students while other students showed dismay. One of the SLD students (Student 2) especially liked the guided notes. Throughout Baseline phases 2 and 3 he would ask when guided notes would be used again. Six students approached the experimenter in the halls and playground to say that they really enjoyed using guided notes because it helped them keep up with the material presented. Two students let the experimenter know that they were tired of doing guided notes and wanted to get back to writing down what they wanted to write.

All in all, the general consensus was that "getting down all the right information" was what the students liked most about taking guided notes. Most students liked using the guided notes and saw the
benefits of using them. None of the students were "dead set" against using them.

Limitations of the Study

The generalizability of the results of this study was limited by the following factors: subject characteristics, setting, time of school year, subject matter, absences, teacher, length of lecture, length of phases and change in procedures, length of study, type of questions, varying difficulty of quiz items, varying difficulty of content, and notetaking.

Subject Characteristics

Twenty fifth-grade students (two LD, seven gifted, and 11 regular), aged 10-12 years, were the subjects for this study. The effectiveness of using guided notes compared to students' own notes on academic achievement with students of different grade or ability levels, students of different ages, and a larger or smaller group of students were not studied.

Setting

The setting was a suburban, public elementary school. Results of the study may be different with students in urban or rural schools. Even though the study was conducted at about the same period of time each day, some days brought unforeseen events that
caused the study to be conducted either earlier or later than usual. These changes were due to assemblies, guest speakers, early dismissals, district competency based evaluations, etc.

**Time of Year**

This study was not conducted throughout the entire school year. The study began in February during the second week of the second semester and lasted until the last week in April, approximately 2 1/2 months. School was not in session for 11 days for Spring Break, which occurred during the second Guided Notes phase. How the time of school year may have affected the dependent variable of accuracy of student performance and daily quiz scores is unknown.

**Subject Matter**

Social studies, specifically American History, was the content area used for this study. The effects of guided notes and students' own notes with other content areas such as science, math, language, etc. were not studied.

**Absences**

This study was conducted, for the most part, during winter and the very early spring months. This is a period of time during which student absenteeism
runs high due to illness. When a student was absent, he/she missed the quiz and the lecture. During Baseline 1 and Guided Notes 1, absent students missed only the lecture and the quiz covering that day's lecture. However, during Baselines 2 and 3 and Guided Notes 2 and 3, students who were absent missed the quiz covering the prior day's lecture, the lecture for the day they were absent, and the next day's quiz covering the lecture material from the day of their absence. Therefore, one day's absence resulted in the loss of two data for daily quizzes. Quizzes and lectures were not made up.

**Teacher**

The teacher of this fifth-grade class taught the social studies content throughout the study. Many years of teaching experience, rapport with the students, and familiarity with the content material and classroom/school procedures were advantages for this teacher. The extent to which the effects of guided notes may have been affected by an "unfamiliar" teacher were not studied.

**Length of Lecture**

Each instructional period lasted approximately 30 minutes and was divided into three parts: lecture,
review, and daily quiz. The lecture took about 15 minutes of this instructional period. At the secondary and college levels, lectures are considerably greater in length and contain more material. The extent to which student performance might be affected by increasing the lecture period cannot be determined by this study.

**Length of Phases and Change in Procedure**

The first two phases of the study, Baseline 1 and Guided Notes 1, lasted 9 sessions each. During these phases, the review and quiz covered that day's lecture. Baselines 2 and 3 lasted five days each and Guided Notes 2 and 3 lasted nine days each. During these phases the review and quiz covered the previous day's lecture. Since the change in procedure resulted in the daily quiz being administered the following day, quizzes covering a Friday lecture always had a three day delayed recall instead of the usual one day delayed recall. Effects of varying phase lengths and increased delayed recall for quizzes was not specifically determined.

**Length of Study**

The study lasted for 48 school days, 27 of which involved the use of guided notes. The effects of using
guided notes for an entire school year was not studied.

Type of Quiz Questions

A 10-item daily quiz was administered during each instructional session. Quizzes were made up of five recall (fill in the blank/short answer) and five recognition (multiple choice) questions. The effects of using different type quiz questions, true/false, matching, and essay, were not studied.

Varying Difficulty of Quiz Questions

Although the experimenter tried to write items of consistent difficulty throughout the study, in a content area subject like social studies, it is not always possible to have questions that are of equal difficulty.

Varying Difficulty of Content

The content material for each day of social studies instruction varied from day to day. The material presented covered exploration of new lands to the American Civil War. Different students were interested in different aspects of the content covered. These differences in interest may have affected students' performance on quizzes.
Notetaking

Students were not required to take notes. During baseline phases 1, 2, and 3, students were inconsistent in their notetaking responses. Some students took no notes, some took detailed notes, and others took sketchy notes. All students, however, completed the guided notes during the phases they were used. Since not all students consistently took notes during baseline phases, they were involved in less academic student responding, which probably affected their quiz performance. Had all students taken notes consistently, a more precise measure might have been taken.

Implications for Classroom Practice

The results of this study are encouraging. Based on a written student questionnaire, all 20 students felt that guided notes aided them in getting more information and better quiz scores. More importantly, the data show this to be true. The students' regular classroom teacher indicated that she liked using guided notes. It helped her with instructional unit planning and helped her, as well as the students, stay on task.

Research has shown thorough and accurate notetaking to be a skill upon which academic success is
dependent. Still other research shows that there is a consistent correlation between OTR and academic achievement. Guided notes is one strategy that can be used to both increase OTR/ASR and to help students accomplish the task of taking "good notes". Since students in this study were consistent in taking guided notes and inconsistent in taking their own notes, it seems evident that guided notes are a useful strategy for teachers to implement.

As already stated, guided notes serve as a strategy to increase OTR/ASR. The structure of guided notes act as a stimulus for students to respond to and interact with the material. Since guided notes help students focus on the material being presented by cueing them to note key points, students are helped to stay "on-task" throughout the instructional period.

Guided notes enable students to ask specific questions for clarification regarding the material presented. During the lecture, students can note areas which are unclear by starring a key term or idea on the guided notes. At the end of the lecture, students can easily refer back to these reference points provided by the guided note. Students taking their own notes, especially those with learning problems, may not be
afforded the opportunity to participate in discussion or ask questions for clarification because they were unable to take meaningful notes for that part of the lecture.

Guided notes also provide students with accurate and complete notes to study. Furthermore, LD students can have a set of complete notes to take with them to the LD teacher/tutor. Guided notes help the LD teacher/tutor know exactly with what to help these students study and how. The present study showed that when the LD students were permitted to review their notes with the LD teacher, their quiz scores during Guided Notes phases greatly improved.

What are some practical implications of using guided notes? Teachers are required to plan more carefully when using guided notes. In order to construct an accurate, thorough, and useful set of guided notes, teachers must carefully think through the goals and objectives for a unit of study. The construction and duplication of guided notes requires an initial investment of some time, but after a format has been established, the time factor is greatly reduced. Initially, it took this experimenter 30-45 minutes to prepare guided notes for one lecture.
However, once a format had been established, that time was reduced to approximately 15-20 minutes. Once developed, the guided notes can be used over again with other students. If written with a word processing system, changes can be made with little difficulty.

Guided notes also help teachers stay "on task". They remind teachers to "stick to the subject" and to keep the discussion relevant. They help the teacher from being swayed off track by the students because everyone now has a visible "agenda", so to speak.

Guided notes help students retain information. In the present study this was shown by the performance scores on daily quizzes. The average mean quiz score for the class went up about two letter grades from baseline to intervention phases. Most students did retain more information and their improved performance was evident. Hopefully by retaining more information, students will increase their knowledge.

Suggestions for Future Research

The following are some areas suggested for future research: systematic replication changing only minor variables, teacher presentation aspects, guided notes formats, retention effects, and notetaking skills.
**Systematic Replication**

Systematic replication of this study could be done with: (a) students at different grade levels, (b) different content areas (e.g., science, language, math), (c) different student populations (e.g., SLD only, developmentally handicapped (DH) only, severe behavior handicapped (SBH) only, gifted and talented (GT) only, regular students only, or a combination of all or any of the above).

**Teacher Presentation Variables**

The effects of guided notes and students' own notes on academic performance could be studied using different methods of teacher presentation. One method is for the teacher to use an overhead projector and transparencies that go along with the lecture and resemble the students' guided notes.

Pacing of the lecture, slow-paced versus fast-paced, and their effects on students' notetaking is another presentation method that could be investigated. These lecture pacing methods might also be looked at with or without the use of an overhead.

Having teachers use an overview and studying its effects on students' notetaking might be another presentation method to consider. Before the lesson
begins, the teacher could give students an overview of what they were going to cover and what they would be able to do by the end of the lesson. Another teacher presentation method is choral responding. A study comparing guided notes with or without choral responding and which produced greater learning can also be conducted. An example of using choral responding with guided notes might be where after the teacher presents an item of information, he/she can turn the informational fact into a question requiring that all students respond at the same time.

Yet another teacher presentation method to investigate is the effect that using a summary has on student notetaking. Summaries could be made at the end of a set of information before going onto other related, but somewhat different sets of information during a lecture. At the end of the lecture, the teacher could do another summary that covers the entire lecture. Choral responding would be a good presentation method to combine with the summaries.

**Guided Notes Formats**

Differing guided notes formats and their effect on students' academic performance should be studied. Some suggested guided notes formats to consider are long
form versus short form, sketchy versus detailed, one
word responses versus phrase or sentence responses,
lines serving as fill-in-the blank cues versus letters
or numbers serving as cues to write-the-blank space
cues, and vocabulary type exercises versus outlines.

Retention Effects

The differential effects that guided notes and
students' own notes have on long- and short-term memory
retention can be checked by utilizing evaluations that
occur at different intervals. Quizzes can be
administered right after a lecture, the day after a
lecture, biweekly, or weekly. Since it is customary
for secondary students to be evaluated with midterms,
finals, or tests at the end of a unit, studying the
effects of notetaking formats on long-term memory
retention is recommended. These tests would cover a
greater amount of material and would require students
to retain this information over an extended period of
time.

Notetaking Skills

Studies could be conducted to see whether the
amount and quality of students' own notes improved
after having used guided notes over an extended period
of time. The present study dealt with this issue over
a short period of time. A study conducted over an extended period of time (1-3 years) would more adequately evaluate the possible effects. Introducing guided notes and then slowly fading out their use could help determine if students will eventually take more and better notes of their own. Whether students begin to take more organized notes that included the important points can be investigated with the fading out procedure.

Studies might also be directed toward investigating any generalization of improved notetaking skills to other subject areas after having used guided notes in another subject area. Students could be surveyed about their opinions with regard to the following questions: (1) As you participate in a guided notes class, do you feel you learn more? (2) After having used guided notes, do you feel you are a better notetaker in your other classes? and (3) Do you feel you are learning more in your other classes as a result of having used guided notes in another class?

Prerequisite Skills for Benefitting from Guided Notes

Researchers should investigate which skills are needed by students in order to benefit from the use of guided notes. Such skills might include listening,
following directions, attention, handwriting, spelling, visual memory/perception, auditory memory/perception, etc. Once the prerequisite skills needed have been determined, those skills could be taught to students prior to their use of guided notes.

Summary

A large part of success in school is dependent upon the student's ability to organize and recall academic information. Research has shown a consistent correlation between the ability to take thorough and accurate notes and academic success. Research has also shown a consistent correlation between OTR/ASR and student achievement. Guided notes is one strategy that can increase OTR/ASR and better notetaking skills, both of which lead to better student academic achievement.

The purpose of this study was to compare the effectiveness of two notetaking methods: students' own notes and guided notes. The primary dependent variable was a daily 10-item quiz. A reversal design was used during the study to compare the effects of students' own notes and guided notes. Students took their own notes during baseline phases and completed guided notes during intervention phases. Each daily session consisted of three parts: review of the previous
session's material, quiz over the previous session's material, and a lecture presentation of new social studies material.

Results indicate that students' use of guided notes was effective in improving their performance scores on daily quizzes. The average mean daily quiz score while using guided notes was higher (86%) than the average mean daily quiz score when using students' own notes (70%). Furthermore, students recorded more concepts/facts during guided note phases (96%) than during students' own notes phases (34%).

All students in the study demonstrated improved performance on daily quiz scores. Based on letter grades, this meant an improvement of almost two letter grades for most students (from a C- to a B). The students with specific learning disabilities showed the most significant improvement in daily quiz performance. These students realized a 29% increase in mean quiz scores by using guided notes. Regular fifth-grade students had a 16% increase and gifted students saw an 8% increase.

All 20 students felt that guided notes helped them learn more and get better quiz scores. Some students preferred taking their own notes because they could
write what they wanted, while other students preferred guided notes because they were able to write less and pay more attention to the teacher. In general, the students felt that guided notes helped them get all the important information.

In conclusion, results of this study show that guided notes increased the daily quiz scores of students and provided students with a format on which they recorded a greater percentage of concepts/facts presented during instructional sessions.
LIST OF REFERENCES


Heward, W.L., Test, D.W., & Cooke, N.L. (1986). *Strategies and tactics for increasing the level of active student response during group instruction* (student guided notes for 772). Columbus: The Ohio State University, Department of Educational Services and Research.


APPENDIX A

PERMISSION SLIP
Parent Consent Form

I agree to allow my child to participate in a research study investigating the use of guided lecture notes during social studies instruction. This study will be conducted by Gloria P. McLain, a teacher at the Edison Building, under the direction of Dr. William L. Heward. The study will require approximately one-half hour per school day for about eight weeks. I understand that my child's identity will not be revealed in any publication, document, recording, video tape, photograph, computer storage, or any other form of report developed from this research. Additionally, I understand that I may withdraw my consent for my child's participation at any time.

________________________________________
Name of Student

________________________________________
Signature of Parent or Guardian

Date

________________________________________
Gloria P. McLain, Investigator

Date
APPENDIX B

LETTER ACCOMPANYING PERMISSION SLIP
January 25, 1988

Dear Parents,

In the coming weeks, my class will be participating in a study designed by Gloria Mc loin under the auspices of The Ohio State University Education Department. Using the Grandview Heights social studies curriculum, we have designed a carefully structured program for the presentation of materials and the testing of student achievement. The focus is on development of note-taking and study skills that students will have increasing need for in the future.

Please sign the attached permission slip and send it to school with your child as soon as possible. Feel free to call me or Mrs. Mc loin if you have any questions.

Sincerely,
APPENDIX C

SAMPLE DAILY QUIZ
1. Why did the British tax the colonists?

2. The British lawmaking group is called:
   a. Legislature  c. House of Lords
   b. Parliament    d. Congress

3. People who collected the taxes and were allowed to keep part of the tax were called:
   a. Law Officers  c. Internal Revenue Officers
   b. Taxation Troops  d. Customs Officers

4. In 1764, the British lawmaking group decided to begin taxing the colonists. Two items they taxed were molasses and ____________________.
   a. sugar  c. tea
   b. tobacco  d. cotton

5. Once the Stamp Act was enforced, colonists had to buy stamps for all kinds of paper products. Name one paper product that would have been taxed.
6. Why did taxes passed by the British lawmaking body make the colonists angry?

7. What does the phrase "Taxation without Representation" mean?

8. The name of the group formed by Samuel Adams to protest taxes was called:
   a. Sons of Freedom  c. Sons of Liberty
   b. Sons of England  d. Sons of Colonists

9. Name one thing this group did to protest taxes.

10. In 1766, the British lawmaking group repealed the Stamp Act. Repeal means:
    a. change a law  c. write a law
    b. copy a law  d. do away with a law
APPENDIX D

RECORD FORM FOR STUDENT QUIZZES
| Student | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 |
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APPENDIX E

RECORD FORM FOR STUDENT CONCEPTS
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APPENDIX F

SAMPLE LECTURE OUTLINE
American History
Lecture 16

Road to Revolution II

A. New Problems and New Troubles

1. French and Indian War was expensive.
   a. British felt colonists should pay for war.
   b. Felt colonists should pay for continued protection.
2. Parliament decided to tax the colonists (1764).
   a. Taxes on sugar and molasses.
   b. Taxes collected by Customs Officers.
4. Customs Officers - collected the taxes, allowed to keep part of the tax, became unpopular with colonists.

B. The Stamp Act (1765)

1. Colonists had to buy stamps for paper products.
   a. Marriage licenses
   b. Playing cards
   c. Newspapers, etc.
2. Colonists objected to the taxes.
   a. Did not object to taxes voted in by their own lawmakers.
   b. Did object to taxes they had no say in.

C. "Taxation Without Representation"

1. "Taxation without Representation" - forced to pay taxes by lawmakers in which you have no representation.
   a. Colonists not able to vote for members of Parliament, so
   b. Colonists could not vote on taxes.
2. Stamp Act referred to as "Taxation without Representation" by James Otis - young lawyer from Massachusetts.

D. Protest and Repeal

1. Sons of Liberty - group that protested taxes.
   a. Founded by Samuel Adams.
   b. Persuaded people to halt British Goods Purchases.
   c. Raided tax offices.
   d. Burned tax stamps in streets.
2. Stamp Act repealed (1766)
   a. Repeal - do away with, cancel a law.
3. Colonists believed they had won.
APPENDIX G

SAMPLE GUIDED NOTES
Road to Revolution II

A. New Problems and New Troubles

1. The French and Indian War _________________.
   a. The British thought the colonists ________
      ____________________________________________________________________________.
   b. Britain thought the colonists ________
      ____________________________________________________________________________.

2. In 1764, Parliament decided to ____________ the colonists to help pay the bills for the war.
   a. Colonists had to pay a tax on ________
      and ____________________.
   b. ____________________________ collected the taxes.

3. __________________ - the British lawmakers group.

4. __________________________ - the people who collected the taxes. They were allowed to keep
   part of the taxes themselves.

B. The Stamp Act (1765)

1. Under this law, colonists had to buy __________
   for all kinds of paper products.
   a. __________
   b. __________
   c. __________
2. The colonists objected to the taxes.
   a. 
   b. 

C. "Taxation without Representation"
   1. "Taxation without Representation means ____________
      __________________ by a lawmaking group in
      which you have no representation.
      a. Colonists could not _______________________
         ________________________________.
      b. Colonists also could not ______________________
         ________________________________.
   2. James Otis, a young lawyer from Massachusetts,
      referred to the Stamp Act as ______________________
      ________________________________.

D. Protest and Repeal
   1. _______________________ - a group of colonists
      formed to protest the taxes.
      a. It was founded by ________________________.
      b. 
      c. 
      d. 
   2. In 1766, the British Parliament ______________ the
      Stamp Act (tax).
      a. Repeal - means ________________________.
      3. The colonists thought ________________________.
APPENDIX H

INSTRUCTIONAL TRANSPARENCY
Making Chocolate Pudding

A. Materials Needed

1. Saucepan
   a. 
2. Spoon
   a. 
   b. 
3. Measuring Cups
   a. 
   b. 
4. Bowls
   a. 
5. 

B. Ingredients Needed

1. Pudding Mix
   a. One 3 1/2 oz. box of ________________ pudding and pie filling
2. Milk
   a. ______ cups

C. Cooking the Pudding

1. Steps
   a. Measure 2 cups ______ into the saucepan
   b. Mix contents of ____________________________ with the milk in the saucepan
   c. 
   d. 

D. Getting Ready to Serve the Pudding

1. Steps
   a. Put 1/2 cup of the __________________________ into each small dessert bowl.
   b. Cover each bowl with a piece of ________ _________________. This keeps it creamier!
   c. 
   d. Top with ________, if desired, before serving.
APPENDIX I

DIAGRAM OF NOTEBOOK CHECKOUT CHART
Notebook Checkout

1
Note

2
Jen

3
Chris

4
Ed

5
Eria

6
Trish

7
Cary

8
Ben

9
Josh

10
Bobi

11
Sara

12
Tom

13
Mike

14
Jesse

15
Lisa

16
Cory

17
Dean

18
Sue

19
Kate

20
All
APPENDIX K

STUDENT WRITTEN QUESTIONNAIRE
Student Questionnaire

Name

1. Which way of taking notes did you like best?
   Own Notes  Guided Notes

2. Which notes helped you learn more?
   Own Notes  Guided Notes

3. Which notes gave you better quiz scores?
   Own Notes  Guided Notes

4. Which notes were easier to take?
   Own Notes  Guided Notes

5. Which notes were easier to review?
   Own Notes  Guided Notes

6. During days without guided notes, did you feel that you began taking more of your own notes after having used guided notes?

7. What did you like about using the guided notes?

8. What did you dislike about using the guided notes?

9. What did you like about taking your own notes?

10. What did you not like about taking your own notes?

11. Put any other comments you may have on the back of this paper!
APPENDIX L

STUDENT INTERVIEW QUESTIONS
Student Interview

1. Which way of taking notes did you prefer? Why?

2. Which way of taking notes seemed easier? Why?

3. What did you like best about using guided notes?

4. What did you dislike about using guided notes?

5. What did you like best about taking your own notes?

6. What did you dislike about taking your own notes?

7. Did you feel you started taking more of your own notes after having used guided notes?

8. What are some comments you have about the notetaking experiment?