

LINKING ORAL AND WRITTEN SUMMARIES:
USING ONE MINUTE SUMMARIES IN A
COOPERATIVE LEARNING ENVIRONMENT

CENTRE FOR NEWFOUNDLAND STUDIES

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LAURA TRASK-SIMMONDS



LINKING ORAL AND WRITTEN SUMMARIES:
Using One Minute Summaries in A Cooperative Learning
Environment.

By

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ABSTRACT

by Laura Trask-Simmonds

LINKING ORAL AND WRITTEN SUMMARIES:

Using One Minute Summaries in A Cooperative Learning Environment.

Intermediate students frequently have difficulties reading and recalling information contained in their Social Studies texts. Research related to the topic confirms that children have more difficulty retaining knowledge contained in expository text than narrative text (Raphael, Kirschner, & Englert, 1988; Hidi & Baird 1986; Meyer & Freedle, 1984). This study, which investigates the combined effect of oral summarization and cooperative learning as a prewriting strategy, addresses the need for new teaching methods to be developed to enable students better access and exposure to knowledge based learning.

As a learning strategy, summarization is a powerful study tool (Divine, 1991; Brown & Day, 1983; King and Lipsky, 1984). It requires students spend more time on text and thereby helps readers "clarify the meaning and significance of discourse" (Brown, Campione & Day, 1981) p.473). Oral summarization in cooperative groupings maximizes this benefit as it provides repeated opportunity for revisiting the text and rehearsal of the salient points. Varying the student's role from listener to presenter within

groups requires that the student learn to process information in both a foreword and backward direction, acquiring knowledge to become a presenter (foreword) and then mentally checking for accuracy as a listener (backward). This double processing is highly beneficial in acquiring and retaining textual information.

The One Minute Summary learning strategy requires students become both presenter and listener but allows for extended support from cooperative group members such that those of lower and average capabilities fare as well in presentations as those able to manage well on their own. This is an essential aspect.

The strategy is intended as a prewriting strategy and evidence of its success is expected to be found in the student's written summaries. The results of this study indicate the One Minute Summary can be beneficial to students in their attempts to acquire expository text. Most importantly, it indicates that lower achievers are those learners most likely to be benefitted.

TABLE OF CONTENTS

ACKNOWLEDGEMENTS.....	ii
ABSTRACT.....	iii
LIST OF TABLES.....	viii
CHAPTER	
1 INTRODUCTION.....	1
Statement of Purpose.....	2
Research Questions.....	4
Scope of the Project.....	9
Importance of the Project.....	9
Organization of the Project.....	12
2 REVIEW OF THE LITERATURE.....	13
Overview.....	13
Summarization: A Learning Strategy.....	14
Oral Summarization.....	17
The Effect of Recall on Oral and Written Summaries.....	20
The Value of Prewriting Strategies.....	24
Summarization: Some Implications for Writing.....	25
Developmental Concerns.....	27
Cooperative Learning Teaching Method.....	29
Associative Learning and Transfer.....	33
Motivation.....	36
Philosophy Behind the One Minute Summary.....	38
Summary.....	38

3	METHOD.....	40
	Design.....	40
	Procedures for the Collection of Data.....	41
	Subjects.....	41
	Grouping.....	42
	Materials.....	43
	Procedure.....	45
	Coding and Marking.....	51
4	ANALYSIS AND FINDINGS.....	54
	First Analysis: Mixed Design Anova.....	54
	Second Analysis: One Way Anova.....	56
	Evidence of Transfer.....	59
5	CONCLUSIONS, DISCUSSIONS AND IMPLICATIONS.....	64
	Summary.....	64
	Main Ideas.....	64
	Supporting Ideas.....	65
	Accuracy.....	66
	Organization.....	67
	Total Summary Scores.....	67
	Transfer of Knowledge and Skills for Less Advantaged Students in Cooperative Groupings..	69
	Whole Group Effects of Cooperative Learning...	70
	Discussion and Implications.....	71
	Conclusion.....	77

BIBLIOGRAPHY.....79

APPENDICES:

- A Approvals for the study
- B Copy of the Text Excerpt Used for the Pretest
Copy of the Excerpt Used for the Posttest
- C Copy of the Readability Graph
- D Copy of the Vocabulary Test

LIST OF TABLES

1 - Mixed Design Anova: Group by Age.....	55
2 - Analysis of Variance: Test for Homogeneity:.....	56
3 - Analysis of Variance: Vocabulary Score by Age	57
4 - Main Effects: Group.....	58
5 - Experimental Group: Lowest One Third Scores in Both Vocabulary Test and Pretest Performance (3 Overlap)...	60
6 - Control Group: Lowest One Third Scores in Both Vocabulary Test and Pretest Performance (4 Overlap)...	61

CHAPTER 1

Introduction

This project is based on the premise that summarization, a powerful learning strategy in its own right (Brown, Campione & Day, 1980; King, Biggs & Lipsky, 1984; Winograd, 1984; Devine, 1991;), can be coupled with oral rehearsal in a cooperative learning environment to create a dynamic pre-writing climate enhancing students' ability to recall expository text and write about that which they have learned.

It has been well documented that students, particularly younger students, have more difficulty summarizing expository text than narrative text (Raphael, Kirschner, & Englert, 1988; Hidi & Baird, 1986; Meyer & Freedle, 1984). They have less difficulty recalling events or details inherent in narratives because the events and details are woven together in connected storybook fashion, a genre familiar and enjoyable to children who are frequently exposed to children's literature and media. "It is easier to judge importance, notice inconsistencies and condense ideas when working with more familiar ideas" (Hidi & Anderson, 1986, p. 476). Expository text is more complex and non-linear (Meyer & Freedle, 1984). When the intent is 'exposure' of new concepts and ideas, it usually is not given in the form of a story. As Hidi and Anderson (1986) discovered, in reading expository text 'importance' and

'interesting' are unlikely to overlap. It stands to follow, then, the less interesting the article or chapter appears to be, the less likely a student will become motivated to fully engage in the learning. For young students the reading may seem tedious.

Primary children in the emergent stages of reading and writing are exposed to far more narrative than expository text, however this gradually changes as students advance in school years. The expectation that older students deal with larger quantities of informative text can be a transitional struggle for many children. Many have difficulty retaining the informative details and even more difficulty writing about them. Raphael et al. (1989) argue "...when children reach the upper grades of elementary school, where there is a greater emphasis on learning content, their progress in writing often declines.... One reason for this decline may be that children are not being taught how to read and learn from informational or content area texts" (cited in Tierney et al., 1990, p. 135).

Statement of Purpose

The purpose of this study is to explore the potential of the 'One Minute Summary', a memorization and oral rehearsal strategy designed to engage elementary students in the recollection and organization of subsequent written summaries of expository social studies text. Through frequent manipulation and active processing of the text

material, students working in cooperative groups exposed to this strategy are expected to know, and write about, more information than those who are not.

The strategy:

Students of the class were broken into groups of three and read, by the facilitator, an excerpt from a social studies text. Each student had a copy of the text to follow along. The groups were then given the opportunity to quickly review, and recall as many of the informative details as possible. Each student needed to be ready to orally report for his/her group since groups, and presenters within these groups, were randomly chosen. Each presenter was given one minute to orally recall the group's information, hence this was called the 'One Minute Summary'. As the group representative stood and presented his/her summation, the facilitator silently, using either pen and paper or fingers, counted the number of ideas remembered. The other members of that presenter's group were encouraged to remind the oral presenter of any details he/she might be forgetting. The number of ideas recalled was recorded and two other randomly chosen groups and presenters were given the same opportunity. The object was to match or hopefully better the number of ideas already recalled.

Research Questions

Implicit in studying the usefulness and effectiveness of this strategy were a number of research questions:

- 1) Would students actually recall more information as a result of using the One Minute Summary?

The One Minute Summary is a pre-writing strategy intended to improve individual student's recall by repeated refocusing and manipulation of the text. There is little research which specifically deals with oral rehearsal as a pre-writing strategy, particularly where expository text is the focus. However, studies closely linked to this topic indicate oral review has a positive effect on retention. Ross and DiVesta (1976) found that "oral review of material studied is an effective strategy for enhancing recall of meaningful textual material" (p. 693). Students they worked with were able to orally recall more text items if they had participated in an oral rehearsal prior to giving their oral report. Tierney and Cunningham (1984) in a survey of instructional practices, looked at oral reading as a teaching method and were less conclusive in their support, suggesting that the research is "sparse and equivocal, although there exists a slight edge in favor of oral reading over silent reading for purposes of comprehension. Poulton and Brown (1967) and Rogers (1937) found no difference between learning from text after oral reading as compared with silent reading, while Collins (1961), Elgart (1978),

Graham (1979) and Rowell (1976), all found comprehension and retention to be superior after oral reading for students at several age levels" (cited in Pearson, 1984, p. 624).

Student recall of textual information is crucial to the subsequent construction of a written summary. Simply, the more a student recalls, the more he/she is likely to write, therefore it is important to determine whether the oral 'One Minute Summary' pre-writing strategy would positively effect recall.

2) Would there be any evidence of transfer of higher order thinking skills demonstrated by proficient summarizers?

That is, would less capable students recall more information or perhaps more main ideas as a result of being exposed to strategies like selection, deletion, superordination of ideas and condensing modelled orally in rehearsal and presentation by other members of the group(s) and the whole class?

Research completed by Sharan (1980) and Dansereau et al. (1984, 1987), has demonstrated evidence of transfer of skills from more proficient learners to less proficient learners in cooperative learning situations. For this study it is significant to investigate whether it is possible that the modelling, or peer tutoring aspects of the groups' whole class as well as small group activities, enhanced the probability that low achievers would internalize important

summarizing skills and improve their own performances as evidenced by their written summaries.

3) Would the recall as evidenced by the written summaries be accurate?

The 'One Minute Summary' is similar to a brainstorming type of activity to the degree that students have to recall as much information as they can in a quick fashion. It has a "just get it out" quality and is intended to prod students memories of as many text items as possible. Given that the students have not had repeated exposure to the text and are relying on their own recall and the recall of the others in class to support their knowledge base, there exists the concern that accuracy not be neglected. During oral presentations to the class, the facilitator may be the 'corrector'. But within groups, as students review what they know, they may state information correctly, corroborating one another's facts, or they may recall text items incorrectly and not realize until later during class presentations, or perhaps never if they happen not to be attentive, that such is the case. This could lead to misinformation. The degree of accuracy in students' summaries is a measure of the usefulness of this strategy that needs to be examined.

4) Would the acquisition of information contained in expository text be supported by a cooperative learning environment?

To some extent, this will be shown in the data extracted and analyzed regarding the transfer of skills. As mentioned above, the successful transfer of summarization skills from more proficient to less proficient students would be evidence of a measure of the success of grouping students in cooperative triads. But, it also bears examining whether this strategy is received well by the students who participated in this cooperative learning study. Upon auditing class participation was there evidence of increased motivation on the part of all or most students to examine expository text? The degree to which a strategy increases student motivation to participate and learn is the underpinning of it's success. A theoretically well developed strategy is not as useful to students when have little fun or satisfaction using it and therefore resist participation. Sharan and Shachar (1988) in their investigation of Group Investigation as a cooperative learning strategy found a positive link to motivation. They suggest "it appears reasonable to attribute some portion of the superior achievement of pupils from the Group-Investigation classes to a distinct increase in their motivation to learn and to the heightened interest and attention to the task that result from their motivation" (p. 119).

5) Would the 'performance' aspect of the strategy create anxiety for students?

This begs investigation because negative performance anxiety can be detrimental to learning and therefore sabotage the potential success of using the One Minute Summary. Zajonc (1966) discovered "increased anxiety during learning can increase interference and thereby hinder acquisition" (cited in Ross & DiVesta, 1976, p. 690). However, Ross & DiVesta, (1976) ascertained that "provided the task was well learned initially, arousal (anxiety) generated by imposition of the oral review requirement (as a "test") can facilitate recall (Schultz & Dangel, 1972; Travers, Van Wagenen, Haygoo, & McCormick, 1964)" (p. 690).

In utilizing the One Minute Summary one of the expectations is that each student be ready to respond with an oral report when called upon. In and of itself this expectation might create an atmosphere of anxiety, however, this is unlikely because the strategy was developed for a cooperative learning environment, and support prior to and during the oral presentation is at a maximum. Sharan (1980) in his investigation of the effects of cooperative learning found "team learning clearly increased helping behavior, perceptions of giving help and receiving help, and a sense of being able to cope with classroom studies (measures of "difficulty")" (p. 257). It is anticipated that the supportive effects of the cooperative learning arrangement will outweigh any potential effects of performance anxiety.

Scope of the Study

This project's main focus is grade four, five and six students whose social studies assignment was to study one country and compose a 'culturegram', or profile, of life in that country detailing information pertaining to, among other topics, food, clothing and housing. These children attend a small school, (population less than 400) in a middle class neighborhood in Mission, British Columbia. This study examines improvement in students' written summaries as measured by written recall after they have been exposed to an oral, cooperative learning, pre-writing strategy called the One Minute Summary. The criteria for selecting these students were that they were intermediate level students involved in reading and writing about social studies.

Importance of the Project

Children have more difficulty summarizing expository text than narrative text (Hidi & Anderson, 1986), yet we know that summarization is an effective learning tool (Doctorow, Wittrock, & Marks, 1978; Brown, Campione & Day, 1981; King, Biggs & Lipsky, 1984; Dole et al., 1991). It would be beneficial to devise teaching strategies that capitalize on this knowledge about summarization.

Social studies is a curriculum area that relies predominantly on the extensive reading and use of expository text. Having students apply a powerful strategy like summarization to help digest the information contained

within the subject content seems a resourceful proposition. In Becoming a Nation of Readers (1985), the authors conclude "the most logical place for instruction in most reading and thinking strategies is in social studies and science rather than in separate lessons about reading. The reason is that the strategies are useful mainly when the student is grappling with important but unfamiliar content. Outlining and summarizing, for instance, make sense only when there is some substantial material to be outlined or summarized" (p. 73).

The 'One Minute Summary' was deliberately designed for a cooperative learning classroom following background research into studies that documented strong evidence of increased motivation to learn, and positive academic and social learning growth, in students who participated in either group or peer tutoring (Sharan & Shachar, 1988; Goodlad & Hirst, 1989; Slavin, Karweit & Madden, 1989; Sharan, 1990; Slavin, 1990; Davidson & Worsham, 1992). Sharan and Shachar (1988) in their review of the literature examining cooperative learning methods versus the more traditional teacher-delivered learning methods concluded "...cooperative learning methods more often than not yielded superior academic outcomes for pupils from different ethnic groups and/or social classes who studied in the same classroom. The present study shows that the extent of these outcomes can be considerable, and not just statistically significant" (p. 112).

Summarization is a skill that requires a student mentally organize the information presented to him/her. This organization will likely require the use of several, more subtle sub-skills such as reviewing, condensing, prioritizing and synthesizing. Orally summarizing information prior to writing allows a student to practice putting these skills to work before actually bringing words to paper. More importantly for this project, this rehearsal within small cooperative groups, allows students to verbally exchange and refine their ideas without constraint. Use of more subtle organizational skills as students strive to bring their summaries into focus is overtly modelled while group members, of various academic levels, are actively engaged in the processing of this information. The skills surrounding the summarizing of expository information are being demonstrated within each group. Students' individual attention is concentrated and the potential for associative learning is excellent.

If use of the 'One Minute Summary' can improve summarization skills as evidenced by increased recall of main and/or supporting ideas in written social studies summaries, or, subsequently, and if use of this strategy can establish indications that associative learning can take place for less advantaged learners in cooperative groupings, then the prediction that this project will produce important findings will have been realized.

Organization of the Project

Chapter one provides an introduction, a statement of purpose, the research questions motivating the study, the scope of the project, the importance of the project and the organization. Chapter two is an overview of the literature that provided the theoretical basis for the investigation. Chapter three outlines the methods used in conducting this study, including design chosen, procedures for the collection of data, participating subjects, grouping procedures, materials, experimental procedure, coding, marking and intended analysis. Chapter four reports the results of the statistical analysis and the findings of the overall study. Chapter five discusses the findings and relates them to the original research questions. Conclusions regarding the success of the strategy are delivered and implications for further educational research are postulated. Final conclusions and a summation complete the paper.

CHAPTER 2

Review of the Literature

Overview

Three principal theoretical components inherent in the construct of the One Minute Summary are 1) summarization (oral and written), 2) recall, and 3) cooperative learning. Research on each of these individual areas of study is available in abundance for examination, and, in several instances, topics overlap with some similarity to elements of design. The wide ranging nature of this literature review is due to the fact that no research has been done on "One Minute Summaries". However the composite of the studies investigated unequivocally points to the possible benefits of integrating these theoretical components in the 'One Minute Summary' strategy.

Specifically, this review will investigate current literature pertaining to the following areas: summarization as a strategy for learning, oral summarization, the effect of recall on oral and written summaries, the value of pre-writing strategies, writing tasks involved in summarization, developmental concerns, cooperative learning as a teaching method, associative learning and transfer, and motivation.

Of particular importance to this study is the classroom environment created by the use of cooperative learning teaching methods. This aspect of the study design may be

pivotal in scrutinizing successes or limitations in using the 'One Minute Summary' in classrooms. Research clarifying the limitations of cooperative learning in facilitating achievement is divided. For most subject areas, eg. mathematics, language arts, its positive influence on achievement is verified, whereas, in social studies, while the research is sparse, that which exists failed to produce evidence of tangible benefits and is not supportive of its use for this curriculum content (Sharan, 1980). Among others, one intention of this project is to challenge the above research finding.

Summarization: A Learning Strategy

Summarization as a study skill has received a great deal of attention from researchers in the field of education in recent years. Many have investigated with a view to unraveling the cognitive processes involved in condensing and restructuring text (van Dijk & Kintsch, 1976; Doctorow, 1978; Afflerback & Johnson, 1984), while others are more focused on the connection between teaching methods, training, and students' summarizing behavior as evidenced by observable changes in student end-products (Garner, 1981, 1985; Bean & Steenwyk, 1984; Hidi & Anderson, 1986, 1989). The majority of studies about summarizing examine written products. This study will focus on oral summarizing and the effect it might have on students' subsequent written end-

products when employed as an in-class teaching strategy in a cooperative learning environment.

Researchers concern themselves with summarizing because it has been established that it is a powerful study tool (Divine, 1991; Brown & Day, 1983; King & Lipsky, 1984). Divine (1991), having looked at the available literature on the subject to date, concluded summarization training improves the quality of assignments students are able to produce and suggests further that the activity improves reading comprehension as it requires the student to spend more time "on-text" which correlates highly with reading achievement. Hidi and Anderson (1986) suggest it is "of considerable importance to see that children are able to summarize the materials they read in school. In addition to monitoring comprehension and recall, the process of summarization can facilitate learning as it helps readers clarify the meaning and significance of discourse" (Brown, Campione & Day, 1981 p. 473).

Frequently students, particularly intermediate and older students, are given text passages to read with instructions to come up with the 'main ideas' as a way of summarizing. Embedded in this request is the requirement that students initiate a multitude of cognitive operations which are complex and demanding. Summarization, to various degrees and for different age groups, can involve any and all of the following: reviewing, reflecting, selecting, deleting, condensing, collapsing, combining, and the

superordination of ideas. Determining importance is an essential ingredient to constructing a summary, and literature on metacognition indicates that "in general intermediate-grade and junior high school students can differentiate which information is most important when reading (Brown & Smiley, 1977; Danner, 1976)" (cited in Adams, Carrnie & Gersten, 1982, p. 32). However, much more is required. In fact, many researchers (Garner, 1985; King, Biggs & Lipsky, 1984, Winograd, 1984) aware of the cognitive load this particular task presents to students, maintain training is essential to enable children to complete the task effectively.

Brown and Day (1983) and Brown, Day and Jones (1983) argued effectively that summarization is not just the outcome of recall or comprehension. They suggest it involves "a selection process in which conscious judgments are continuously made, and a reduction process in which propositions are deliberately condensed through a variety of higher order transformations (Johnson, 1983)" (cited in Hidi & Anderson, 1986, p. 475). The discrimination involved in making the selections contributes to the resulting comprehension. The process itself improves the learning. Paris et al. (1991), in suggesting strategies that foster readers' ability to comprehend text, highly recommend summarization as a post-reading strategy for both narrative and expository text.

Oral Summarization

Oral summarization differs from written summarization in a number of significant ways. Obviously the delivery is by a different medium, but beyond that, its very orientation is different. The deliverer is conscious of having to present to a listening audience, therefore aspects of rehearsal and prioritizing information for that purpose enter into the encoding of textual information. Ross and DiVesta (1976) suggest this actually facilitates acquisition of the text through review that strengthens associations learned. In their examination of two treatment groups who had both studied text for recall purposes where one was expected to present an oral summary later, but the other was not, they found oral summaries enhanced retention for both the presenter and the listener but more significantly for the presenter engaged in verbal recall. The authors concluded oral review, particularly where the student was engaged in the recall, was an effective strategy for processing textual material.

Oral summaries also allow immediate feedback to the presenter regarding possible inaccuracies. Corrections are made quickly. Listeners, particularly the facilitator, can correlate levels of mastery and understanding of the information being presented and clarify or redress any confusion or errors. Both parties are therefore engaged in reviewing the textual material simultaneously and the

benefit is two-fold, though possibly to differing degrees (Ross & DiVesta, 1976).

O'Donnell et al., (1987) in a study of cooperative dyads wherein two partners read and recalled text orally found those who alternated roles of summarizer and listener retained more information than those who maintained positions throughout various trials. Orally presenting information requires that the presenter actively engage in processing the material read, moving cognitively, in a forward direction. Being the listener for that presentation requires an additional and somewhat different process reversing that cognitive operation. Information being received now needs to be compared with information previously stored for aspects of, for example, accuracy and completeness, and the reverse checking contributes to deeper processing and better recall. These researchers concluded oral summarization was an effective study strategy for acquiring and retaining text. Interesting to note, however, is the fact that the use of cooperative learning techniques was instrumental in bringing about the reported results.

As previously mentioned, summarizing is a complex task that can involve several cognitive operations such as selecting, deleting, arranging ideas hierarchically and so forth. With oral summarization additional factors compete to affect the outcome. The "audience effect" (Zajonc, cited in Ross & DiVesta, 1976) is one that can be either a problem and interfere with the acquisition of material or a

motivator in that it provides an incentive to perform well. Research suggests if the material (or task) is learned well in advance of the expectation to perform, the ensuing anxiety can actually facilitate recall (Schultz & Dangel, 1972; Travers et al., 1964, cited in Ross and DiVesta, 1976). Following their study of oral summarization Ross and DiVesta concluded their most effective treatment comprised coupling active review with the expectation that an oral report would ensue.

It would seem the key to alleviating the detrimental effects of performance anxiety, as might be found in an oral summary, involves allowing the performer a high degree of mastery over the information required of him/her in the presentation. Inherent in cooperative learning strategies, such as the one being investigated in this study, is constructive whole group and subgroup support for the learning task. The initial mastery of material as well as the coping with anxiety regarding performing become shared activities. This researcher postulates support of this kind will relieve negative performance effects and provide students with positive motivation to perform well.

Another factor to consider in oral summarization is cognitive workload. Reading the text and considering employment of strategies for summarization are two separate cognitive operations that require the participant's attention. Adding an oral report component requires, according to Afflerbach and Johnson (1984) "allocating space

in working memory for reporting, in addition to the processing space required by the experimental reading task... (it) involves theorizing about the processes. This latter requirement involves an added burden on the reader's cognitive processing" (p. 311). In their discussion of task manageability the authors refer to Britton, Glynn and Smith's "cognitive workbench" suggesting there are limits we can place on the bench. Yet, studies have shown (Ross & DiVesta, 1976; Larson et al., 1984) oral review with the instruction to expect to perform an oral report has actually improved achievement.

The Effect of Recall on Oral and Written Summaries

Learning is the result of the integration of a number of cognitive functions of which memory is one. Without memory, retrieval of knowledge for synthesis with both new and old information would likely be problematic (Anderson & Pearson, 1984). Given stimulus, how would one know if it was familiar or not? Memory plays a major part in establishing connections whether the information is received by one or all of the bodily senses. It is obviously essential to understanding.

Many of the early researchers who dealt with memory, Gestalt, Bartlett and Kohler (cited in Anderson & Pearson, 1984) referred to the effects of prior knowledge on current interpretations of text within the reading process. They variously alluded to, as current schema theory suggests

(Anderson & Pearson, 1984), the idea that memories or pieces of memories and perceptions, or "schemata", are synthesized with newly presented information to form novel combinations of perceptions, or, newly constructed 'memories'. It is a bridging and building response. Retrieval of previously encoded information in memory is fundamental to this theory. If one allows that this theoretical framework is an acceptable explanation for the understanding of new information, memory becomes imperative in the process of learning.

Recall is the term used to describe the quantity of information one is able to retrieve from memory upon demand. School children are commonly required to orally recall information to either indicate understanding of concepts, demonstrate attentiveness or review instruction details. It is a commonly accepted teaching strategy used for immediate clarification and review. Current research indicates summarization facilitates the recall of text (Garner, 1981; Adams, Carnine & Gestan, 1982; Anderson & Armbruster, 1984; King, Biggs & Lipsky, 1984; Hidi & Anderson, 1986; Divine, 1991).

King et al. (1984) in an examination of summarizing as a study strategy determined "in general, it appears that generating summary or paraphrase statements following segments of passages facilitates recall of those passages" (p. 208). Several others have found similar results. Divine (1991) in a review of study skills and strategies discovered

"evidence exists that students may use written summaries as a means of retaining new content area knowledge in memory" (p. 748). Adams, Carnine & Gesten (1982) agree suggesting "the literature has shown that improved retention of information can be achieved when (among other factors) students generate summary statements about what they are reading (p. 32).

Garner (1981), in her study of the costs and benefits of summarizing, discovered "high efficient" summarizers, those who included more judged important ideas in their written summaries, also processed and stored information in a highly condensed and streamlined manner. The higher order processing occurred in the encoding as well as the retrieval. This backward and forward effect has also been recognized by Ross and DiVesta (1976) as contributing to the positive results on recall scores in their study.

Hidi and Anderson (1986) examined recall in text-present and text-absent conditions and found students who wrote summaries with the text present did not attain the high measures of long term retention as those students who wrote summaries from memory. They attributed the difference to "a more active cognitive performance" (p. 478). It would seem the more cognitive effort required the greater the results.

Researchers of oral summarization as a learning strategy (Ross & DiVesta, 1976; O'Donnell, Dansereau & Lambiotte, 1987) lend support to the notion that oral

rehearsal is an effective way to process text information. O'Donnell et al. investigated cooperative dyads rehearsing text recall in both the role of listener and summarizer and found those who maintained the role of recaller, and did not switch to listener, surpassed the other groups on recall scores. Those who alternated roles outperformed those who simply maintained the listener position.

Ross & DiVesta (1976) in their study of oral summaries as a review strategy also employed passive and active listeners and summarizers, and discovered similar results. Passive listeners did not recall as well as active summarizers, however, they also concluded overall oral review has a positive effect on retention, and furthermore, "verbalizers and their observer counterparts retained more information from the passages they read than did controls who did not engage in review" (p. 693). Again, active processing appeared to be the explanation for these results. Hidi and Anderson (1986) support the idea that active processing involved in summarizing facilitates learning as it monitors recall and comprehension and clarifies meaning and significance of discourse.

In this researcher's study recall will be closely examined in both oral review and written summary end-products.

The Value of Prewriting Strategies

The association of reading and writing is so entwined it is often hard to separate issues related to one without thinking of the other. Yet, writing is a uniquely complex skill that differs from reading in that, as Rosenblatt (1989) says, "a writer sits before a blank sheet of paper and has to produce a text whereas a reader starts with the already written or printed text and must produce meaning" (p. 154).

The transition from reading to writing about a piece of text, particularly expository text, can be difficult for students (Raphael, Englert & Kirshner, 1988). Rosenblatt suggests students need a "warm-up exercise for starting the juices flowing...permitting elements of the experiential stream, verbal components of memory, and present concerns to rise to consciousness" (p. 164). Charles Chew (1985) in support of this theory suggests prewriting in which students are brainstorming, gathering information, reflecting, and discussing allows children an opportunity to focus their learning. It is intended that the 'One Minute Summary' will reflect these ideals.

Raphael, Englert and Kirschner (1988) researched the use of 'think sheets' as a method of bridging the reading-to-writing process in tackling expository text in the intermediate grades. They discovered, conclusively, as many teachers have found in their classrooms, more manipulation of the text facilitates better recall, and, more familiarity

with the subject material allows for better response from students in written end-products. Their particular strategy goes beyond summarizing as the think sheets are intended to train students to write extensive papers on the text material and includes aspects of the writing process model such as editing with partners.

Much of the research referred to previously has laid foundation for the premise that active processing of information in text is instrumental to improving recall of information. Chew (1985) agrees and in a comparison of the reading and writing process suggests that as much as writers benefit from sharing their writings so should readers share their readings. He suggests this can be "as simple as a retelling or a verbal response which in some way permits others to know about the reader's experience and the content of what has been read" (p. 171). The interaction between teller and listener, as in the recall segment of the 'One Minute Summary', should be quite valuable.

Summarization: Some Implications for Writing

According to Hidi and Anderson (1986), several factors affect the quality of written summaries including length, genre, complexity of textual material studied, and "audience", whether the summary is writer-based, written for the writer, or reader based, written for the reader. They suggest writer-based summaries are best for individual study as they focus more on the material rather than the delivery

whereas reader-based summaries involve more requirements in consideration of the mechanics of the writing task itself and therefore make the process more difficult by comparison. Dole, Duffy, Roehler & Pearson (1991) agree suggesting production of reader-based summaries transforms summarization "from a comprehension to a composition task" (p. 245). However, the authors of both studies agree that whether writer-based summaries or reader-based summaries are requested of students, both facilitate learning. They also agree that students benefit from summarization training.

Several researchers have investigated the teaching of summary writing skills to students (Brown & Day, 1983; Bean & Steenwick, 1984; Hare & Borchardt, 1984; Hidi & Anderson, 1989) and much valuable information has been uncovered. Previously discussed in this paper was the concern for students' cognitive load as they tried to contend with the tasks involved in thinking through, planning and then writing a summary. Brown and Day (1983) added another factor by requesting a constraint on the length of the summary written in their study. Surprisingly, they discovered this forced students into a higher level of processing causing them to condense more efficiently.

Hidi and Anderson (1986) investigated summarizing in both text-absent and text-present conditions and found students' end products were improved, as was long term retention, for text-absent conditions. They attributed this finding to the higher levels of cognitive processing

required to complete the task from memory. Many students, particularly younger children, in text-present conditions, relied on copy/delete rather than paraphrasing when the text was available to them. The authors recommended, however, that students just learning to summarize be introduced to the strategy in text-present conditions. In fact recognition of developmental concerns was a common thread throughout most of the research surveyed. Overall, authors yielded agreement in one area, that developmental age affects students' ability to summarize.

Developmental Concerns

The operations involved in summarizing are complex and demanding of the individual. A student must select important information while deleting the trivial, condense material and integrate ideas into a coherent representation of the selection read (Brown & Day, 1983; Hidi & Anderson, 1986; Dole et al., 1991). Studies have indicated these cognitive processes are developmental in nature and younger children have more difficulty than older children, who, in turn, have more difficulty than adults (Garner, 1981; Brown & Day, 1983). Younger children are more likely just to "copy-delete" to condense, whereas older students progressively become more proficient at reorganizing concepts and combining ideas across paragraphs (Brown & Day, 1983). The deeper processing required to meet the operational demands seems to become noticeably more evident

in adolescence (Bretzing & Kulhavy, 1981; Hidi & Klaiman, 1983 cited in Hidi & Anderson, 1986). By grade six, students are more responsive to increased restraints on the amount they write, paying more attention to superordination of ideas. But, because students become adolescents does not necessarily mean they become better summarizers. Many continue to rely on copying verbatim as a basic technique. It would appear it is not a naturally acquired skill for some students.

Unfortunately, poorer ability students are unable to discriminate importance in text as well as adult or better readers placing them at a distinct disadvantage in summarizing reading materials at all developmental levels (Winograd, 1984). These students require more individual assistance in learning summarizing strategies, however, many studies have shown that the effort pays off (Bean & Steenwyk, 1984; Brown & Day, 1983; Garner, 1985). Carr and Ogle, (1987) authors of the K-W-L (know/wonder/learned) strategy belatedly added summarization to their overall working plan because they found it particularly useful to disabled readers. Meeting the demands involved in summarization helped these readers to organize and restructure ideas which led to greater overall learning of the material.

Summarization is a late developing skill (Brown & Day, 1983) and written products may not show signs of sophistication until well into university years (Garner,

1981). However, teachers introducing this strategy to young students in their early years of schooling, and following on throughout, will likely improve the probability that these students will be empowered for life by a very effective writing tool.

Cooperative Learning Teaching Method

Cooperative learning became established in the eighties but it is only of late that it has become a more commonly used teaching practice. It attempts to answer the need for students to personally construct meaning as opposed to receiving transmitted knowledge. The student takes an active role in the learning process and benefits from this engagement.

Theoretically, it developed from attention to early research on constructivist theory (Vygotsky, 1978, cited in O'Donnell et al., 1987). Slavin (1990) explains the cognitive theory behind cooperative learning by addressing two categories of theoretical basis:

- 1) **Developmental Theory:** This states "the fundamental assumption is that interaction among children around appropriate tasks increases their mastery of critical concepts" (p. 14). Slavin cites Vygotsky (1978) in support of the idea that "collaborative activity among children promotes growth because children of similar ages are likely to be operating within one another's proximal zones of development, modeling in the collaborating group behaviors

more advanced than those they could perform as individuals" (p. 15). He suggests many Piagetians support cooperative learning because it is thought that "interaction among students on learning tasks will lead in itself to improved student achievement. Students will learn from one another because in their discussions of the content, cognitive conflicts will arise, inadequate reasoning will be exposed, and higher-quality understandings will emerge" (p. 16).

2) Cognitive elaboration Theory: This theory revolves around research in cognitive psychology as it relates to recall and memory. Slavin (1990) suggests "if information is to be retained in memory and related to information already in memory, the learner must engage in some sort of cognitive restructuring, or elaboration, of the material". He further states, "One of the most effective means of elaboration is explaining the material to someone else" (p. 16).

Cooperative learning strategies, typically, are more interactive than traditional teaching methods. Rather than a lecture, students are more likely to be involved in activities like "jigsaw puzzle" (Aaron, Stephan, Sikes, Blaney & Snapp, 1978) where groups are designated and each student in each group is responsible for providing information necessary to complete each group's report of the topic being investigated, or, "Teams, Games and Tournaments", (DeVries & Slavin, 1978) a similar strategy that can involve groups interacting within a classroom or be extended to include groups in a school. Recent literature

suggests this type of teaching enhances the acquisition of content material and leads to better individual academic performance (O'Donnell et al. 1987; Larson et al., 1984; Sharan, 1980).

One of the major benefits of cooperative learning is that it seeks to place the responsibility for learning directly in the hands of the learner. Each student is held accountable to participate and contribute to the learning activity and environment. Group members are expected to work together toward a common goal and each member of each group is likely to have a job he/she is solely responsible for completing. Jobs vary greatly from providing a partial report to be added to a larger group report or simply taking on the role of encourager in a discussion of important issues. Interaction of group members is essential and support amongst members is to everyone's benefit.

One of the most obvious differences, compared to traditional teaching, is the sizable increase in "student talk" as opposed to "teacher talk". This is because, as Sharan (1980) puts it, "at this time, teachers must relinquish their role as primary dispenser of knowledge and control. Decentralization of authority and classroom focus is required to promote direct contact and exchange among pupils" (p. 242). Traditionally, teachers have done most of the talking in classrooms. Yet there is increasing information to support the theory that if students are to learn new information and concepts they must 'process' the

newly acquired knowledge (Davidson & Worsham, 1992). Through more student interaction with the material, more discussions, more questioning amongst themselves students are more likely to achieve a higher level of processing than if they remained receivers of information as in the traditional model. In effective cooperative learning the procedures for interaction, enabling them to access the content, are taught to the students. However, once they have the operational framework they are essentially independent to produce results, with the exception of supervision on the part of the facilitator.

This type of group interaction, predictably, produces interesting results that effect learning and social behavior. Sharan (1980) in a survey of several cooperative learning strategies concluded small group performance, with respect to overall academic achievement, was superior, but, in addition, group and individual social behaviors showed marked improvement with respect to creation of a more positive learning environment. Students indicated more positive feelings about working in this supportive environment.

The 'One Minute Summary' embraces tenets of the cooperative learning philosophy. The results of this study will likely show evidence that a cooperative learning environment enhances the learners' opportunity to benefit from oral summarization prior to writing, and that students' written work, including that of less capable students, will

show marked improvement in recall and organization because of exposure to this cooperative learning strategy.

Associative Learning and Transfer

In Becoming a Nation of Readers, (1985) it is stated "Children of any given level of ability who are in fast-paced groups show growth beyond the expected" (p. 87). Proponents of split grade classrooms, and this researcher, by virtue of experience, would agree. To some degree all students get caught up and pulled along in the learning avalanche surrounding them in an enriched learning environment. It would seem unlikely that the grade fours would not process some of what the grade fives are exposed to during instruction in the course of the school year.

It is clear that a cooperative learning style of teaching facilitates the acquisition of textual material (McDonald et al., 1985; Dansereau et al., 1979) and provides more opportunity for positive transfer of skills amongst students (Larson et al., 1984; Sharan, 1980). It is not clear in current literature whether the transfer occurs primarily because the textual material is being manipulated frequently in the groups and dyads therefore familiarity with the material simply increases recall skill as a function of memory, or whether less efficient students, seeing more capable students orally modelling summarizing strategies such as prioritizing for importance, condensing and reorganization of text, are internalizing these more complex

operations to some degree and therefore becoming more proficient at summarizing themselves.

Sharan's (1980) study of group interactions in the use of "group investigation" problem solving supported the latter in that results indicated interaction within teams cultivated more original problem solving on the part of less capable students. They were not simply given the answers by other more capable students. More recent work by Sharan and Shachar (1988) confirmed earlier findings. Their comprehensive study comparing traditional with Group Investigation methods showed superior achievement results for the Group Investigation method in History and Geography. Specifically, findings indicated superior results for questions regarding simple answers as well as those that required more complex operations such as synthesis, application of knowledge to new problems and inferences. One could conclude the Group Investigation method is, at some level, effectively addressing the active processing of information and skills for students of varying abilities.

Researchers investigating recall in cooperative dyads (Larson, et al., 1984; O'Donnell et al., 1987; Ross & DiVesta, 1976) found interestingly positive results in pairing students with dissimilar rather than similar vocabulary scores and concluded heterogeneous pairs may learn by exposure to new roles and strategies. Sharan (1980) found establishing heterogeneous groups for factors like race, gender, strong likes and dislikes helped create more

rounded groupings that cooperated to a greater extent and resulted in better associative learning results.

In looking at effective programs for students at risk Slavin, Karweitt and Madden (1989), in an examination of several cooperative learning classroom programs, including Team Accelerated Instruction, and Cooperative Integrated Reading and Composition, found positive effects for mainstreamed academically handicapped students. In the larger analysis of the literature they discovered "all of the cooperative learning methods have had positive effects on such outcomes as race relations, acceptance of mainstreamed students and, self-esteem (p. 42).

Peer tutoring, a method of learning often used for learning intervention for students at risk, holds tenets that parallel cooperative learning. It pairs two students in a teaching/learning situation with the 'tutor' being the more capable and often older of the two, and the other, the 'tutee', the student needing help. Goodlad and Hirst (1989) examined the benefits of this type of arrangement and found several benefits to both tutors and tutees, such as, tutors develop a personal sense of adequacy, find a more meaningful use of the subject matter, reinforce their knowledge, take on a more productive role, and develop insight into the teaching/learning process such that they can then cooperate better with their own teachers. Tutees who receive individualized instruction and more direct teaching, are more likely to respond better to their peers, and receive

additional companionship that lessens the sense of bewilderment about the unknown. These benefits are noteworthy because it is reasonable to assume that many of the reported outcomes of two students working together in a capable/less capable scenario might be compared to the outcomes of cooperative groups of three, where the success or failure of the project is interdependent though the learning set-up is slightly different. Goodlad and Hirst (1989) have concluded, through their survey of several studies, that there are large gains to be made in affective and cognitive areas by placing these advantaged and less advantaged students together. They suggest

"Drawing on the work of Bruner (1963), the main proponents of Youth Tutoring Youth argue that children who teach other children have to struggle to make the material meaningful to the learners and thereby have the opportunity of reflecting upon their own learning processes. This opportunity may increase the tutors' awareness of the patterns of learning and consequently help them to develop their skill in seeing problems in new and different ways" (p. 60).

Motivation

The success of any teaching strategy is dependent upon student's appreciation of its value. They need to believe there exists a benefit in exchange for having participated in the learning activity. For many, it is intrinsic, the learning itself as part of the bigger picture of overall school success or failure, while for others the simpler requirement, regardless of the bigger picture, is that it not be boring.

Cooperative learning, with its interactive group characteristics, strives to ignite students' sparks by putting them in control of the learning. This action, in accordance with current research, is one of the keys to improving motivational behavior (Paris, Wasik & Turner, 1991; Wigfield & Asher, 1984). Paris et al. (1991) suggest "students who feel little control over their learning may feel incompetent, helpless, or passive, which may lead to negative affect and defensive strategies such as non-participation, excuses and cheating" (p. 626). They go on to say it is likely that perceived control improves the likelihood that commitment to learning of new strategies will be improved.

Since one important objective of cooperative learning is to instigate activity from each member of the group its very design ensures there will be reduced opportunity for less motivated students to just fade into the background. They will ultimately be encouraged by their classmates to engage in the learning. The accountability factor is far reaching and motivates most group members to support one another. Fortunately, research shows that for those who participate, the active processing itself, which might be just listening, improves the probability of success where recall is a factor (Ross & DiVesta, 1976; Hidi & Anderson, 1986; Anderson & Armbruster, 1984), and, success is the most powerful motivator of all.

Philosophy Behind the One Minute Summary

The simple philosophy behind the 'One Minute Summary' is that knowledge is the basis of understanding and the more information one has about a topic, the more one is able to comprehend its depth and breadth. With expansive knowledge, one is more capable of spotting similarities and differences and comparisons become profitable. Hopefully students studying a foreign culture, for example, as is currently so common in our intermediate schools, could use this summary to increase their wealth of knowledge about a subject area and be more proficient in extending their thinking to writing about what they learned.

Given the research evidence presented in this literature review, it seems as though a strategy which brings together summarization, a powerful study skill (Brown & Day, 1983; King & Lipsky, 1984; Devine, 1991), strong potential for improving recall with its use (Garner, 1981; King, Biggs & Lipsky, 1984; Hidi & Anderson, 1986), and the positive benefits of cooperative learning (Sharan, 1980; Larson et al., 1984; O'Donnell et al., 1987) would enhance student learning and motivation. In this context I decided to study the 'One Minute Summary'.

Summary

Many researchers have focused on subjects' written summaries and some on oral summaries. Both have been examined in either traditional school or college

environments, alternate school environments, i.e., cooperative learning classrooms, or other clinically-oriented environments. None has specifically looked at the connection between oral summarization and its effect on written summarization in a cooperative learning environment and particularly not as the result of a strategy like the 'One Minute Summary'.

Research, as quoted above, has established the qualitative merit of summarization as a study tool and, related research indicates a positive relationship between oral summarization and recall of textual content. Cooperative learning has been recognized as an effectual method for facilitating learning and improving achievement, and the implications are that associative learning effects are a bonus to less proficient learners.

In using 'One Minute Summaries' in a cooperative learning/teaching environment this study will show evidence that in-class presentations of oral summaries improves recall (quantity) and organization (quality) of ideas in subsequent written summaries for both capable and less capable students.

CHAPTER 3

METHOD

DESIGN

The general hypothesis for this study is that students who are exposed to the 'One Minute Summary', a new strategy, will create better written summaries, containing more main and supporting ideas, than students who are not exposed. Because it is the intention of this researcher to investigate a quasi-experimental treatment, the circumstances lend themselves to the use of the pretest-posttest control-group design (Berg & Gall, 1983).

According to Berg and Gall (1983) four essential elements are included in the pretest-posttest control-group design: "1) random assignment of subjects to experimental and control groups, 2) administration of a pretest to both groups, 3) administration of the treatment to the experimental group but not to the control group, and 4) administration of the posttest to both groups" (p. 665). The plan for this researcher's study followed this design framework with the exception that students could not be randomly assigned. To randomly assign students from three different classes in the school would have disrupted three teachers' schedules for prolonged periods of time and was not a viable option. Rather, two existing classes were kept intact and placed in either control or experimental groups

and a third was divided so only one teacher had to release students for both the control and experimental sessions.

PROCEDURES FOR COLLECTION OF DATA

A proposal for the collection of data for the purpose of this study was submitted to the ethics committee at Simon Fraser University. Once approval was granted, subsequent further written approval was obtained from District # 76 superintendent, Mr. Keith Cameron and Hillside Elementary principal, Ms. Linda Kaser. Final written approvals were collected from the parents of the participating students. (See appendix A)

SUBJECTS

The participants in this study were intermediate students in grades four, five and six ($N = 62$). These students were chosen because their homeroom teachers had planned to include, in the students' regular semester curriculum, a social studies unit that had as its objective the close examination of a foreign culture. The researcher assumed responsibility for teaching these students the four week unit required for their program while also taking the opportunity to investigate the potential of the 'One Minute Summary'.

The target population was a heterogeneous grouping of ten - to twelve - year - old students who attended a small school in Mission, British Columbia. Subjects were

predominantly middle class with a near equal distribution of males (N = 29) to females (N = 33).

Grouping

The strategy under investigation required cooperative subgroups be formed for thirty - five students in the experimental group. Reading was a factor in this study, but independent reading was not crucial since the facilitator read the passages aloud, so subgroups were formed to include at least one proficient oral reader in each to ensure maximum accessibility of the text to all members. It was reasoned students who may not have followed the facilitator's oral reading could review parts with a proficient reader in their assigned subgroup setting. Therefore, reading proficiency was considered to ensure even ability distribution within subgroups.

An Informal Reading Inventory was used to obtain a broad measure of intelligence prior to beginning the experimental treatment. For the purpose of subgrouping in the experimental class, scores were ranked at the 80th and above percentile were labelled "threes". Students at the 60th and above percentile were labelled "twos" and those below 60th were labelled "ones". Subgroups were proposed based on there being at least one "three" in each. These subgroups were then reviewed by the three classroom teachers for any obvious problems. No changes were made.

At the advice of the learning resources teacher, and only for the purpose of this study, the one student who required learning assistance support staff was removed from the group. It was felt the larger classes and higher noise levels might impede motivation to settle down and participation might not reflect true performance ($N - 1 = 69$).

MATERIALS

The materials consisted of eight reading excerpts extracted from a grade six social studies text, Exploring Your World; six comprised one unit of study on Peru and two, unrelated to this unit of study, were on Hausaland and France as a pretest and posttest respectively (see appendix B).

These passages were selected because they retained approximately the same number of ideas in each. The pretest contained 166 and the posttest contained 164 as determined by three raters independent of the researcher. Readability level conformed to B. C. Ministry guidelines for the intermediate level of learning and the text was on the teacher's recommended list. However, the researcher did perform an additional readability check on the pretest and posttest selections to be sure of acceptability. Both passages fell within grade six readability standards (see appendix C).

In addition, all passages retained the same lay-out features throughout the study providing an added measure of consistency. The text differentiated subsonic headings in bold type, usually just one word (i.e. Food, Clothing, or Housing). These were considered prompts for organization which, in itself, was one factor under investigation in the writing of the summaries.

Other teaching materials were used in the four week instruction on Peru, including, a set of slides, a grouping of photographs and a film, all provided by District #76 Resource Center. The researcher was careful to ensure learning experiences and exposure to these materials was identical for both groups.

To help designate cooperative groupings and to provide a scale to factor out ability in the statistical analysis of the data collected, an informal vocabulary test was administered to both groups (see appendix D). This measure was used because vocabulary test scores are highly correlated with reading ability and I.Q.. In a study of effective vocabulary instruction, Nagy (1990), suggests research shows a clear and strong relationship between vocabulary and comprehension. Anderson and Freebody (1981) suggest "an assessment of the number of meanings a reader knows enables a remarkably accurate prediction of this individual's ability to comprehend discourse" (p. 77). The intention of this researcher was to use this inventory as a simple predictor.

PROCEDURE

Initial Set-Up: Prior to gathering the students together, the researcher visited the students in their classes and explained the project. Permission slips were distributed and plans were made with the teachers to complete the vocabulary test when permission was received.

Once all required parental permission was garnered, another visit was arranged and the vocabulary test was administered to those who were permitted to participate in a fifteen minute timed period. The students were required to read and identify meanings of vocabulary words of increasing difficulty. They were encouraged to "go as far as you can".

Location: Three split-grade classes divided into two groups were used for this study. Each group contained approximately thirty five subjects, which was too many for a regular classroom, so the multipurpose room was reserved for the duration of the study and students were released from their classes to meet the researcher at this location. Students were located around tables that held six students.

Preliminary Details: The researcher taught each class twice a week during sixty - minute sessions for six weeks. In the first session each group met with the examiner to establish familiarity, discuss the purpose of the study, review and clarify students' knowledge of summarizing, "main idea" and "supporting idea", and conduct the pretest.

The Pretest: Pretesting, for both groups, was identical in procedure. It was explained to students that this was a

research study and the intent was to learn more about how best to teach social studies. They were advised that the summaries they would write during the next six weeks would be collected but not used for the purpose of assessing their individual social studies grades. They would purely be examined as research evidence. However, rather than have students consider this study 'free time' both the teachers and the researcher encouraged students' commitment to learning and put in place other measures of evidence collecting and assessment which included the writing of a 'culturegram', or mini-report on Peru.

The pretest was not associated with the unit of study on Peru. It involved students listening to a passage on Hausaland, Nigeria. Photocopies of this passage were given to each of the subjects so they could quietly follow along with the oral reading. Students were made aware that a text-absent, written summary of what they were hearing/reading would be expected. Upon completion, students were provided with paper and pencils and instructed to independently, without help or prompting from either classmates or facilitator, write a summary of what they remembered within a timed fifteen - minute period. Since summarizing rules were not taught directly to these students they were given the additional organizational instruction to write about the three subspecies covered, "Food", "Clothing" and "Housing". The facilitator timed the students and requested they place

their pencils on the tables when the time had elapsed. The pretest summaries were collected.

Cooperative Grouping: In the preliminary session with the experimental group, following the pretest, exploration of the students' understanding of cooperative learning was also included so as to arrive at a working understanding of teacher/student expectations for the facilitation of learning during the experimental portion of the study. As expected, subjects were familiar with this style of learning so understandings were arrived at quickly and the subgrouping process ensued.

The 'One Minute Summary' was explained to the experimental group and students were assigned a number 'one', 'two' or 'three', based on their researcher/teacher designated level of proficiency for reading. Though students were not told specifically the thinking behind the assignment of the numbers, other than they would be needed to identify subgroup members during recall, several understood the connection. Cooperative subgroups were then assigned and each subgroup was requested to choose a color to represent themselves for future reference. Each student left the session knowing he/she was, for example, a 'two' in the "purple" subgroup. This would be important for future reference during the recall segment of the strategy when the facilitator might request to hear from a two in the purple subgroup.

The Experimental Treatment: For the next six one - hour sessions, only the experimental group used the One Minute Summary learning strategy. The control group who did not use this strategy, spent the same amount of time on learning the text. However, this time was spent, more traditionally, in class discussions of what was read, answering teacher-led questions, and comparisons of life between, for example, Hausaland and Canada.

In using the 'One Minute Summary', subjects in cooperative subgroupings were first made aware of their responsibility to listen and follow along as the text passage was being read; the photocopied text passage would be collected after the reading. All members were to make mental notes of main and supporting points so as to be ready, if chosen, to orally present as many of these points as could be remembered in one (timed) minute to the class. (There would be a five - minute brainstorming period after the reading and before the presentations in which subgroup members could review together all the details they could collectively remember for their oral summaries.) The remaining members of the presenting subgroup could act as prompters if the oral presenter floundered and needed help remembering before he/she had used the entire one minute. The remainder of the experimental group was instructed to count ideas silently by signaling with their fingers each time a new idea was remembered. At the end of one minute the total number of ideas recalled would be tallied for that

subgroup and the total listed on the chalkboard. This would provide a base line for other subgroups to measure their recall against as they acquired the opportunity to repeat this process and either equal or hopefully surpass the base number established. A game-like atmosphere was a predicted outcome of this plan and student enthusiasm increased at the possibility of one subgroup remembering more than the next.

Eleven subgroups met in the multipurpose room during each strategy session and it would have been needlessly redundant to have eleven representatives repeat the same information over and over, therefore it was decided four recall attempts per three-page passage would suffice. All students, however, had to be ready to recall what they knew because there was no predictable system to picking representatives. Subgroup colors and student numbers were picked out of a bag at random by the subjects themselves. Occasionally this resulted in a repeat performance by a student, but the advantage of having everyone ready to respond outweighed the disadvantage of having some opt out of the interaction because they had 'their turn'. Students presented orally and corrections to inaccurate information were made by the facilitator as they progressed.

When recall of the passage information had been through four rounds all students were asked to, as had previously been explained to them, sit quietly and individually write, without undo concern for the mechanics of writing, a timed, text-absent summary of the information they recalled from

the passage. They were asked to use the subheading prompts from the passage to organize their work, i.e. Farming, Fishing or Mining. Each student was given pencil and paper and when the fifteen minutes was up they were asked to place their pencils on the table while the summaries were collected by the facilitator.

This strategy was practiced with the experimental group for each of the six passages on Peru, the unit they were required to learn about. The subgroups were encouraged to support their members and in the five minutes prior to presentation all students were expected to be busy corroborating and counting facts for presentation. Accountability for all members was an essential ingredient for success.

While the treatment group was involved in using this summarizing strategy throughout the experiment, the control group was not. Other methods of instruction, such as class discussion, question and answer, artistic interpretation among others, were used to enhance learning.

The Posttest: In the posttest, the pretest procedure was repeated for a passage on France and, again, students were instructed to independently write a text-absent summary of the reading. Again they were timed for the requisite fifteen minutes to write their response. All subjects were to do so without help and, for those assigned to the experimental group, this meant without benefit of the learned One Minute Summary strategy.

CODING AND MARKING

All written summaries were collected by the examiner. Students had placed their names on each summary paper and, as there would be a total of eight, these summaries were placed together in student - made folders that had been artistically personalized. As they were previously informed, participants in this research study would be able to use the photocopied information passages for the purpose of writing their 'Peru' assignments so they would have another opportunity to read and learn about the country, but the student-written summaries collected in class sessions would have to stay with the examiner, until the conclusion of the research.

The examiner assigned each student an identification number. Each pretest and posttest summary was typed and identified, by number only, to reduce examiner bias. Since readability improved understanding of the students' work and spelling was not an issue the spelling was corrected in the typed versions. They were placed in four folders labelled group 1 pretest, group 2 pretest, group 1 posttest and group 2 posttest. These summaries were evaluated by the researcher and one other independent examiner.

Since it was the intent of the researcher to investigate the total number of ideas recalled (summary quantity) and the number of main ideas and supporting ideas recalled (summary quality), grading keys had to be used.

Three teachers, independently of one another, were recruited to read the pretest and posttest passages and identify

- 1) the total number of ideas existing in the passage,
- 2) those that were considered main ideas, and
- 3) those that were supporting ideas.

The results of these three teachers' evaluations were collated by the researcher and one key for each passage was determined.

Once grading keys were in place, the researcher evaluated student summaries for the total number of ideas, identifying those judged main and supporting. A point system was devised to assess students' work. For each sentence the total number of ideas recalled was the first score given, followed by a score indicating how many of those listed were accurate, since it would be senseless to value statements that reflected the text erroneously. The third score was a total importance value. This was arrived at by attributing four points to the accurate, pre-judged main ideas in the sentence and two points to the accurate, pre-judged supporting ideas. The total was the addition of main and supporting points accrued. The last score was listed to reflect completeness of the assignment. A score of one, two or three reflected whether the student had included all three subtopics or had acquired their score from writing about just one or two. This was included to provide information about the efficacy of timing students and knowledge of organization for summary writing.

Interrater reliability was addressed. A second examiner independently scored ten summaries from each group, including pretest and posttest samples, to provide a comparable measure. Interrater reliability was 86%, and differences were resolved through consultation.

CHAPTER 4

ANALYSIS AND FINDINGS

The evaluation component of this study sought to determine whether use of the 'One Minute Summary' as a rehearsal strategy before writing would lead to improved recall in student's written summaries. Overall, recall was looked at as a main effect. However, accuracy as well as importance, indicated by the number of correct main and supporting ideas recalled, were also investigated.

First Analysis: Mixed Design Anova

In the original analysis of the data a mixed design MANOVA using doubly repeated measures of time (pretest and posttest) was employed, the intent being to investigate both within and between subjects grouping factors. Age was a continuous measure and vocabulary test scores were utilized as covariates for the three dependent measures: recall, accuracy and importance.

The regression analysis provided the following results for the dependent measures: Ideas (Recall) $T=.014$, Accuracy $T=.000$ and Importance $T=.000$. For overall main effects, the results indicated no significant differences between groups over time for the 62 cases, $F=.306$. Further findings indicated the analysis had failed the test for homogeneity of variances providing a partial explanation for this unexpected lack of difference between groups over time.

An examination of the apparent lack of homogeneity led to the discovery that age as a variable created problems for this particular analysis. Three age groups (10, 11 and 12) existed within the control group while only two (11 and 12) existed within the experimental group (diagram 1).

TABLE 1: MIXED DESIGN ANOVA: GROUPS BY AGE

	EXP.	CONTROL	Total
AGE			
10.00	-	16	16
11.00	26	7	33
12.00	6	7	13
Total	32	30	62
%	51.6	48.4	100

Number of Missing Observations: 0

Although this was known at the outset the impact on the analysis was not realized. These subjects were permitted to participate only as intact classes. For practical considerations the teachers did not want to teach partial classes (created by random sampling from the whole population) for the eight week duration of the experimental treatment. In consideration of this sampling restriction it was then postulated by this researcher that statistically factoring in age and ability (vocabulary scores) would compensate for inequalities between groups. Apparently, the assumption that statistical power could offset this

inequality was an error that subsequently caused the failure of the test for homogeneity in the MANOVA and provided an unreliable set of scores from which to draw significant conclusions. A second analysis was executed.

Second Analysis: One Way Anova

In the second analysis the problem of unequal age groups had to be addressed. It was decided to exclude the 10 year olds since they could be found in one group but not the other. This left 44 subjects, 32 in the experimental group and 14 in the control group to be included in the analysis. A one way ANOVA was performed to establish the spread and age range between groups. These groups had unequal numbers, however, it was concluded they were not significantly different for age and ability (Tables 2 & 3).

TABLE 2: ANALYSIS OF VARIANCE

TEST FOR HOMOGENEITY: VARIABLE VOCAB. SCORE BY VARIABLE AGE

Source	D.F.	Sum of	Mean	F.	F.
		Squares	Squares	Ratio	Prob.
Between Groups	1	201.8859	201.8859	.6005	.4425
Within Groups	44	14792.9837	336.2042		
Total	45	14994.8696			

Tests for Homogeneity of Variances:

Cochrans C = Max. Variance/Sum (Variances) = .5720, P = .502 (approx)

Bartlett-Box F = .371, P = .542

Maximum Variance/ Minimum Variance 1.337

TABLE 3
ANALYSIS OF VARIANCE: VOCABULARY SCORE BY AGE

		Mean	Std. Dev.	N
Age	11	47.424	17.548	33
Age	12	52.077	20.287	13
For Entire Sample		48.739	18.254	46

As can be seen by the above table, the means and standard deviations for eleven and twelve year olds, for vocabulary and age, are within a range that indicates no significantly large differences exist between groups in this sample.

Although not ideal circumstances, having reduced the N and created unequal cells, it was determined that a new MANOVA could be performed using the data from the newly formed groups.

The multivariate tests of significance in the second MANOVA produced the following results:

TABLE 4
MAIN EFFECTS: GROUP

Univariate F-Tests with (1,44) D.F.		
	F	p
Pretest Main Ideas	.63669	.429
Posttest Main Ideas	2.43064	.126
Pretest Supporting Ideas	.15753	.639
Posttest Supporting Ideas	.22226	.640
Pretest Accuracy	.00000	.999
Posttest Accuracy	.02517	.875
Pretest Importance (Totals)	.05729	.636
Posttest Importance (Totals)	.67256	.417
Vocabulary Scores	.26104	.612

Results indicate little or no difference over time for the variables accuracy ($p=.875$) and recall of supporting ideas ($p=.640$). However, there is a slight indication of difference in recall of posttest main ideas. This difference was not significant ($p = .126$).

Organization, the ability to segment the ideas into given subspecies, was examined broadly. That is, a simple

count of the number of students who did or did not adhere to instructions was conducted. Less than 20% of the students in the experimental and control groups neglected to organize their summaries in the pretest. This number, for both groups, had decreased to less than 10% for the posttest thereby indicating almost all students had learned to use this summarizing skill by the end of the experiment.

Evidence of Transfer

This research also aimed to explore any evidence of transfer as it applies to the transfer of skills and knowledge amongst students placed in cooperative groupings. This evidence, though scant because of diminished numbers, is encouraging.

Results of students' scores ranked in the lowest one-third of both the control and experimental groups were examined in two categories; 1) lowest ranked Informal Reading Inventory (Vocabulary Test) which was loosely used as a measure of ability and 2) lowest ranked pretest scores, which were not necessarily the same. The 'Totals' performance measures (importance and accuracy) were evaluated between pretest and posttest since this represents the most comprehensive score to describe overall performance. These were examined individually, for indications of improvements or decline in both categories and overall trends were collated. The following tables outline the results:

TABLE 5

Experimental Group: Lowest One Third Scores in Both
Vocabulary Test and Pretest Performance (3 Overlap)

Scores:	Vocab.	Pretest	Posttest	Change
		Total	Total	
Heather	11	42	20	-
David	21	18	20	+
Pamela	21	52	35	-
Kristen	30	52	43	-
Suzanne	31	21	22	+
Bobby	33	11	23	+
Paul	34	40	35	-
Erin	35	53	59	+
Stacey	35	60	40	-
Jordon	41	46	49	+
Eli	43	32	25	-
Travis	44	36	53	+
Joseph	54	10	20	+
Crystal	55	23	69	+
Michael	61	18	44	+
Miranda	73	33	67	+
Andy	76	38	48	+

TABLE 6

Control Group: Lowest One Third Scores in Both Vocabulary Test and Pretest Performance (4 Overlap)

Scores:	Vocab.	Pretest	Posttest	Change
Karl	13	27	6	-
Sheryll	23	16	22	+
Courtney	26	27	15	-
Warren	28	42	32	-
William	43	19	11	-

As can be seen from these tables, the experimental group outperformed the control group for both measures.

The percentage of pupils' improvement indicated for experimental students initially scoring lower in the pretest and then improving in the posttest is quite impressive at 65% in comparison with the control group at 20%. Over half of the less capable students involved in the use of the 'One Minute Summary' improved their total scores to some degree.

It would appear that many students in the treatment group, who experienced the most difficulty scoring for recall on their pretest written summaries, benefited from some aspect of the 'One Minute Summary' intervention.

It was late in the year and well into a very disruptive track season schedule when the data for this experiment was collected and once the last summary was written no extra time could be found to administer an additional, written attitudinal survey to the treatment group regarding their

in-class learning experiences with the 'One Minute Summary'. However, the researcher was able to do an observational, verbal survey before students were dismissed on the last day. Approximately 85% of the students were asked to give individual oral comments to the examiner on how effective the 'One Minute Summary' learning strategy was for them individually. The feedback was very positive as the majority (more than half) of these student's said they preferred the 'One Minute Summary' strategy to reviewing in other, more traditional ways like reading the text over again. They liked the game aspect of the strategy and particularly liked working in groups when trying to remember the details of the passage. It was suggested that this was a "good group activity" and one student used the word "powerful" as a describer. Another, a low achieving student, was relieved she did not have to do any reading out loud and was pleased that her classmates would be able to help her with reviewing the content within a small group setting. Most felt it had helped them to recall more details prior to writing and that this helped them write better summaries than they would have if they had had to summarize the passages by themselves.

Overall, from an observer point of view and for the duration of the experiment, the researcher found the treatment group using the One Minute Summary to be more actively engaged in discussion of the content of the passage, more interested in specific recall of ideas about the passage, more inclined to correct or refine points made

by others in the interest of accuracy, quicker to synthesize and condense information and generally more keen to write when called upon to do so. The activity level in the classroom was higher, voices were louder, and there was more laughter. In general, students were more animated and actively engaged in the learning process. In particular, typically low achieving students were attending to the subject matter and the tasks at hand with enthusiasm. These students seemed actively engaged along with their fellow group members trying to recall as many details as possible for the oral summaries. There were no hitchhikers.

The researcher was confident that this method of learning was a more enjoyable venue for instruction for these students and all observable evidence indicated a higher level of engagement and learning was taking place.

CHAPTER 5

Conclusions, Discussions and Implications

Summary

The primary aim of this study was to field-test a newly developed learning strategy, the 'One Minute Summary'. It was postulated by this researcher that this strategy would improve students' oral recall, and subsequent written recall, of intermediate level social studies text. Five variables were examined: a) recall of main ideas, b) recall of supporting ideas, c) accuracy of recall, d) organization and e) transfer of skills and knowledge amongst cooperative groupings.

The study took eight weeks to complete in the school, and, though in excess of sixty students from three split-grade classes comprised of ten, eleven and twelve year-olds were initially involved, problems with the analysis necessitated the exclusion of ten year-olds, reducing the total sample number to forty-three. While this affected the strength of the study considerably, some interesting results were nevertheless obtained. The major findings and conclusions are as follows.

Main Ideas

Results of the evaluation of written summaries indicated the experimental group recalled slightly more main ideas than the control group over time, although this difference was not statistically significant.

The summarizing strategy employed with the experimental group afforded repetitive oral rehearsal of the ideas encountered in the passage read. Students, in 'on the spot' recall, tended to remember the ideas that made the strongest impact, and those were largely the main ideas. The strength of this strategy was thought to be that content material was manipulated frequently and in a variety of ways: 1. oral reading; students listened and read along, silently, while the teacher initially read the passage, 2. group oral review; students brainstormed and rehearsed for the oral summary, 3. summarizing; group representatives delivered the oral One minute Summaries, and 4. feedback; cross-checking accurate points between students and teacher and, students and students, though this was a natural consequence and not planned. The oral summarizing of the passage occurred four times for each passage. What main ideas one student did not remember in the 'first round' oral summary for the class, the next would likely include. Essentially, as a pre-writing exercise, more material was orally reviewed and students had more ideas reinforced in memory for subsequent written recall.

Supporting Ideas

In written summaries, the experimental group did not outperform the control group in recall of supporting ideas.

The writing of the summaries, for both groups, was a timed activity. Students were given fifteen minutes to write what they remembered of the passage read. Since it has been

noted that the students in the experimental group recalled more main ideas in their summaries it is likely they concentrated on writing those main ideas, rather than the supporting ideas, in the time limit given. Were more time available, it is possible they would have recalled more supporting ideas as well, just as it is possible the control group might have recalled more main ideas. But, as in this case, if time restrictions have to apply, as they so often do in text evaluations, recalling less of the supporting details and more of the main ideas is not so detrimental an outcome.

Accuracy

The ideas recalled by the experimental group were not as accurate as those recalled by the control group.

Initially, one of the concerns of this researcher, in using this particular strategy, was accuracy. Given these results, it is apparent some revision will need to be considered. The nature of the learning strategy, that being one of orally brainstorming whatever one can remember in one minute, while serving to cover more material in a fun way, is subject to young students' exaggerations and omissions that at times may distort the author's intention. The degree of distortion found in the written summaries was often not great, but enough to require either clarification or correction. The strategy should be modified to include application of a negative score for inaccuracies reported in the oral portion of the 'One Minute Summaries'. This should

promote clarification prior to any written work being completed and offset the student's inclination to report inaccuracies.

Organization

Organization, evaluated by the inclusion or exclusion of subtopics that were given and requested use of by the researcher, improved for both experimental and control groups such that nearly all students, by the conclusion of the study, were proficient at organizing their written work.

Students were instructed to include, in their written summaries, three subtopics covered in each passage, i.e., food, clothing and housing. This was a basic organizational technique intended to help students arrange their thoughts and bring consistency of form to all student's work. This benefitted students and evaluators in reducing the possible differences, not related to recall, that might inadvertently influence evaluation.

In the pretest, many members of both groups remembered to subdivide their papers this way. However, a small number did not. By the end of the treatment period however, almost all students were arranging their papers as requested and significant improvements were noted for both groups.

Total Summary Scores

Students in the experimental group scored greater total points for their summaries than students in the control group.

The evaluation of the written summaries was weighed to favour recall of the passage main ideas. Each accurate, main idea recalled was attributed four points while two points were allotted for each accurate, supporting idea reported. The researcher's intent was to encourage recall of the most salient points of the passage as opposed to an overabundance of superfluous detail. This is a skill most educators try to instill in students.

The students in the experimental group, by the end of the treatment, outperformed the control group in creating summaries that recalled more of the important points of the passage and less of the supporting details. Inaccurate statements were not valued and, even though the experimental group invalidated more statements for inaccuracies they still retained more of a combination of accurate main and supporting ideas. Since they remembered more higher-valued, main ideas, their point totals were greater and, by extension, one could say the quality of their summaries was superior. But, given the problems in the analysis that resulted in the reduction of the sample size, suggesting the above, based on the limited results this study has been able to garner, might be an inferential leap. This researcher is inclined to believe that testing a larger sample would prove fruitful in substantiating this finding.

Transfer of Knowledge and Skills for Less Advantaged Students in Cooperative Groupings

Findings in the comparison of results of less advantaged students who participated in cooperative groupings in the experimental group to less advantaged students who participated in the control group, but who were not grouped cooperatively, indicate transfer of knowledge and skills seems likely to occur for more students in the cooperative groupings.

The lowest scoring one-third of students in the treatment group and the control group for two distinct categories, lowest pretest scores and lowest vocabulary test scores, were determined and examined for changes in performance, pretest to posttest, in the total acquisition of ideas. Results showed 65% of the students who performed poorly in the pretest for the experimental group improved their summary totals by posttest compared to only 20% improvement for the control group. This would seem to indicate that some variable occurring in the experimental treatment is responsible for the increase in the number of poorer students improving summaries.

It is entirely possible that these students improved their recall because of the repetition of the material. It is also possible that these students absorbed clues to summarizing more efficiently because they were exposed to repeated modeling of these skills by other group members. Given that these students were observed by the researcher

being actively engaged in the summarizing process time and time again, this would not be an unwarranted leap. A further study, designed more specifically to look at this development would provide valuable information about this topic.

Whole Group Effects of Cooperative Learning

Over time, cooperatively grouped students recalled, on average, more main and supporting ideas, that were accurate, in the posttest versus pretest than did students in the control group. The cooperatively grouped students attained higher summary totals and could be said to have done a better job than the students in the control group.

This would indicate that cooperatively grouped students benefit from repeated exposure to the study material and/or study and review techniques, which by their very nature include such intellectual functions as deletion, condensing, combining, superordination of ideas, and more. More advantaged students, within the experimental cooperative groupings, required to orally deliver the 'One Minute Summaries' to the class, used skills of this nature to prepare themselves. In effect, they modelled these skills to their less advantaged group members.

It was observed by this researcher in the early stages of the treatment that the experimental group was, as a whole, more proficient with respect to written organization. They were better at using the required

subtopics and recalled more ideas within these categories. This was the case because they had, in the class participation of 'One Minute Summaries', recalled details of the passages in connected idea 'bundles'. For example, a student who started speaking about "food" seemed to exhaust his/her knowledge of that topic before going on to another topic, say "clothing". Many students who reported orally utilized some natural linking technique that helped in the oral organization of ideas as they occurred. This skill then seemed to transfer more readily to written summaries.

Overall, analyses results and researcher observations support cooperative grouping as a very effective method of teaching.

Discussion and Implications

The impetus to design and investigate a new strategy for absorbing and recalling information from social studies texts came from repeated discussions by the researcher with many intermediate teachers about the difficulty their students, and particularly less advantaged students, have in dealing with this type of expository information. Written reports often lacked sufficient information; main ideas were often overlooked and students reported details in random fashion and, more importantly, students frequently appeared to loathe completing these projects. It seemed to this educator that more and varied strategies for exciting children about writing social studies reports would be of

considerable use. The 'One Minute Summary' seemed to tackle this overall objective.

The linking of the oral form of recall to the written form of report seemed a natural bridge, and so was investigated as a vehicle for delivery and evaluation of the expected increase this strategy was to have brought about in students recall and understanding of the material. Although the premise looked promising at the outset, and remains so in the mind of this researcher based upon eight weeks of observation, the strategy, by virtue of the design and analysis undertaken, was not found to be significant statistically for improving the ability of students generally, to summarize. It does seem to offer a way to improve the summarization skills of lower ability students, but this indicator requires greater research.

Why didn't this learning strategy show more significant results? This requires a more in-depth look at field-test conditions.

The sample selection process was driven by the needs of the teachers not to disrupt their student's continuous, in-class progress any more than was absolutely essential, particularly as this study occurred in late spring when track and field district involvement competed for students in-class time and attention.

Three classes of students agreed to participate in the project, two in-tact groups of grades four/five and five/six respectively and the grade six half of a grade six/seven

split. This provided the researcher with in excess of 60 students. This would be a reasonable sample size for most studies and it was calculated to be a reasonably sized group for this study. However, the problems that occurred later in analysis were not related to the student population size but to the distribution of students according to age.

As explained in the previous chapter, because the groups could not be scheduled to be broken up according to age or any criteria other than homeroom class designation, the researcher was limited in options for evaluation of any data garnered from this study. One group had ten, eleven and twelve year-olds and the other had only eleven and twelve year-old participants. It was thought that the power of statistics could compensate for this inequity in the sample distribution but that assumption proved false and the sample size had to be adjusted to reflect a more homogeneous distribution for both experimental and control groupings before any valid comparisons could be made. Unfortunately, the necessity of reducing the sample size undermined the validity of the study as a whole and no results were significant enough to advocate adopting the 'One Minute Summary' learning strategy as a valid teaching practice.

What might have been done to offset this problem? This is a difficult question since researchers face a plethora of difficulties merely getting into classrooms to initiate quasi-experimental research. Had this researcher refused to conduct the study without the more desirable, split-

classrooms sample distributed homogeneously by age from the onset, she might not have received permission to go into the classes at all. The teachers would most likely have refused to participate, no observations would have taken place and nothing could have been learned about this strategy. We need to concern ourselves, as researchers, with the ongoing problems of adapting to the environment we wish to fit into and study or risk being rejected in our requests to examine student's learning behaviors, however worthy our motives.

The contrary might also be true. One could say we retrieved very little from this study as it is now determined, and its usefulness could be questioned. Considering the statistical analysis was less successful than hoped and minimal significance was established in support of this strategy as a learning tool one cannot seriously suggest it be validated in the eyes of the educational community. Yet, this researcher would argue there is much to be said for the process itself as she learned a great deal about summarization, oral recall, and particularly the benefits of cooperative grouping as a teaching method. While it is difficult to validate one's entirely subjective opinion, there must be latitude, even in a statistical study as this, for educated observation.

In the opinion of this researcher, the students who most benefitted from the 'One Minute Summary' learning strategy were the less advantaged students who witnessed more capable students in action, modelling summarization

techniques. The cooperative learning method of involving students in the learning process demanded accountability of these students who were known to often 'opt out' from frustration. It was observed that they became immersed in learning the process itself, more so than the material, although obviously they also absorbed more information just by virtue of attending more frequently to the text. Would these students, of their own volition, in future, use summarization techniques more effectively on other material, having been exposed to the eight - week treatment using the one minute summary? Based on the restricted scope of the design of this study, and the limited statistics available to be retrieved from this study, this researcher is unable to address that question unequivocally. However, in her educated opinion and, again, based on observation, it is highly likely there would exist a positive correlation in an investigation designed to determine an answer to this specific question. Such a study is highly recommended since significant results would definitively prove most beneficial for teachers and less advantaged students.

More powerful statistics might have been used to determine significance from the student data, however, given the small sample, it was unlikely to have made much difference. Educators would likely question recommendations made about curriculum use and learning strategies based upon evidence gathered from less than fifty subjects. In most cases, a much larger sample is required to apply the type of

analysis needed to establish validity. Even though three different classes participated in this study the number of participants was, in the first place, a minimum for the treatment and it was highly unfortunate a substantial number of the cases had to be removed ultimately. It is the opinion of this researcher that a much larger sample would have produced significant results allowing for the rejection of the null hypothesis.

In retrospect, increasing the sample size, adjusting, at the outset, for problems with homogeneity or planning for the employment of more powerful statistics might not be the only options that would have improved the design and ensuing results of this study. Additionally, one might consider improvements to the evaluation of the intervention itself, allowing for retrieval of more detailed data about the issues related to transfer of knowledge and skills which appeared to be of most significance to this study.

A questionnaire should be included to determine attitudinal changes over time. A method of monitoring students progress in applying summarization skills following the treatment should be incorporated into the plan. This also means the study should be initiated as early in the school year as possible so that a substantial body of work may eventually be examined. Further, the students behavior during the eight week treatment period using the 'One Minute Summary' might be videotaped, so that if any examiner bias is contaminating the study this information might also be

determined and provide this as well as other invaluable insight.

Essentially, then, the design of this study would change to incorporate not just statistical analysis, although this is of undeniable importance in establishing unbiased evidence of validity, but much more observational accounts as well as attitudinal inventories, over time, from both students and teachers. A more comprehensive assessment would result.

Conclusion

From the moment the 'One Minute Summary' was conceived as a strategy by this educator, it appeared to meet several important objectives. Testing it in the author's own intermediate classroom prior to initiating this project validated the expectations that it would be received well as a strategy and promote learning. The proposal to field-test the strategy, for the purpose of this project, with many other intermediate students was met with much positive anticipation. The above thesis is the result of that investigation, and, although the author believes this project will, upon revision and duplication, validate the educational worth of the strategy, this remains unproven.

If one thing can be learned from this, it is that all learning strategies should be investigated prior to general implementation in the schools. Educators should be loathe to hastily use currently popular strategies if they have not been validated by vigorous investigation and evaluation.

This educator would not have predicted this project's less than desirable results, but even this knowledge is valuable! Further to this, teachers and students in the field need to be made aware of their importance in the undertaking of such research projects and researchers are obligated to make each experience worthwhile. Without complying classrooms and teachers, few investigations, involving the very students we wish to assist in learning, will take place. In effect, our growth as educators would be severely stunted.

This has not been a simple study, however it has been a rewarding one for the author. Though problems surfaced in the analysis, the initial investigation and subsequent evaluation process proved highly valuable as a learning experience for this educator. Confirmation, that examination of the learning behaviors of children in quasi-experimental circumstances, in school environments, is indeed a worthy and necessary undertaking for educators. It came not as a surprise but as a validation of this entire research exercise. Much has been learned which gives license to new investigations. Such is the real nature of learning.

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APPENDIX A

SIMON FRASER UNIVERSITY

VICE PRESIDENT, RESEARCH



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March 26, 1993

Ms. Laura M. Trask
3062 Larch Way
Port Coquitlam, B.C.
V3B 3K9

Dear Ms. Trask:

**Re: Linking Oral And Written Summaries: Does The Use Of
"One Minute Summaries" As A Teaching Strategy
Significantly Improve The Quantity And Quality Of Written
Summaries Of Intermediate, Social Studies Students**

This is to advise that the above referenced application has been approved on behalf of the University Ethics Review Committee.

Sincerely,

William Leiss, Chair
University Ethics Review
Committee

cc: J. Scott
P. Winne

ADMINISTRATION OFFICE
SCHOOL DISTRICT NO. 75 (MISSION)

33046 Fourth Avenue
Mission, British Columbia
V2V 1S5

Phone: 826-6286
Fax: 826-4517



1993-04-01

Laura Trask
3062 Larch Way
PORT COQUITLAM, BC
V3B 3K9

Dear Laura:

Thank you for your letter requesting a research site to complete your Masters' thesis. You have designed an interesting study that will have benefits for students. Mr. Cameron has asked me to work with you as you go through the process of collecting your data. To begin with, the District is pleased to support your request to complete your research at Hillside School. I have contacted Linda Kaser and she will make the necessary arrangements for completion of your work.

In addition, if I can be of any assistance with your research, please feel free to contact me and I'll be pleased to help you. The District would also like to wish you the best as you move toward completion of your degree.

Sincerely,

Paul M. Bion, Ed.D.
Director of Instruction

cc: K. Cameron
L. Kaser

PB/ct



APPENDIX B

Food in Hausaland

Even though people in Hausaland live in a climate that is primarily hot and dry, the main way they earn their living is by farming. The most important crops are yams, groundnuts, millet, Guinea corn, maize, beans and rice. Groundnuts are the same as peanuts. Millet is a tall grass that has brown seeds and grows in dry areas. Sometimes millet is fermented and made into beer. Guinea corn is a type of cane-like grass, and maize is a type of hard, chewy corn. Onions and tomatoes are also grown. In addition, farmers in Hausaland raise sheep, goats, cattle and chicken. These crops and animals form the main part of the Hausa diet.

The Hausa generally have two meals a day. Breakfast is around ten in the morning, and the main meal is late in the afternoon following the heat of the day. Sometimes breakfast is a kind of cold porridge called *acha* (ah' chah), which is eaten from a cup or a small hollowed gourd called a calabash. Sometimes homemade yogurt is drunk, and sometimes chunks of bread are dipped into hot, sweet tea and milk.

The main meal of the day is very large and hot. There is always meat—a favourite is goat meat—and there is always a starchy food, such as rice or yams. A vegetable such as beans or spinach is often mixed with the meat or starch.

People in Hausaland seldom eat dessert. For sweets, people suck juice from an orange or eat pieces of coconut, sugar-cane stalks, bananas, pineapples or cashews. Most of these foods come from southern Nigeria. A favourite snack is *kuasal* (kwah sã'), or beancakes. In some towns, groundnuts are baked over charcoal. The special smoked flavour makes the groundnuts a very tasty snack.

- What foods in Hausaland are the same as foods you eat? What foods are different?



In a market near Sokoto, merchants sell fattened goats. What other animals are an important part of the Hausa diet?

Clothing in Hausaland

Do you think your summer clothing would be comfortable to wear in Hausaland? It would probably keep you cool, but you would get sunburned very easily. Because the sun is so hot, Hausa people wear loose-fitting clothes and hide as much of their skin as possible from the sun.

Almost all clothing is made of cotton. Boys wear lightweight, loose trousers or shorts and long-sleeved **caftans** all year round. They also wear hats to protect their heads from the sun and thongs instead of shoes. Thongs and slippers are comfortable in the heat, and they are easy to slip out of when it is time for prayers. In cooler weather, boys might wear an undershirt beneath the shirt. Girls wear **resses** with short sleeves. They put on a shawl to keep warm or to keep the sun off.

When a boy grows up, he wears a **riga**, or loose-fitting robe, over a long-sleeved shirt and trousers. A **riga** is often decorated with embroidery. A Hausa man always wears a cap called a **hula** (hu' lah). Sometimes the **hula** is embroidered with a design that matches the embroidery on the man's **riga**. The men who embroider **rigas** and **hulas** earn their living doing this kind of work. A Hausa man also wears leather thongs or shoes without backs.

- Why do Hausa men wear hats and long-sleeved shirts?

When a girl grows up, she wears a wrapper, called a **zane** (zah' né), and a blouse. A **zane** is a piece of cloth about 3 m long and 1 m wide that is wrapped around the waist. The end of the cloth is tucked into the top of the wrapper at the waistline, with a little bit left hanging out. A Hausa woman also wears a scarf tied onto her head. Sometimes women wear dresses, skirts and blouses like those worn in Canada.

Hausa women take special care of their hair. A favourite way of styling their hair is to draw sections of hair together with black thread to make a special design.



A Hausa woman wears her finest clothes during a local festival. How is her clothing suited to Hausaland's hot climate?

Houses in Hausaland

Families in Hausaland live in compounds, which are called *gidas* (ge' das). A compound is made up of small one-room buildings or huts. Each building has a purpose. The father has one building for himself, and the mother and her children have another building. Usually a Hausa man has more than one wife. In that case, each wife and her children have a separate building. There is also a separate building for guests to stay in, and there are buildings for storing grain and keeping goats and chickens.

In the centre of the compound is an open-air kitchen. A fire pot made of clay holds burning wood or coal. Small stools are placed here and there, and raffia mats, made from the fibres of raffia palm leaves, are spread about for people to sit on when they eat. Traditionally, family compounds have been surrounded by high walls, but today some are not.

All the small buildings and the wall are made from mud bricks called *tubali* (tu bah' le). To make the bricks, red earth and water are mixed together. Then the bricks are shaped like pears and dried in the sun for several days. After they have dried, they are carefully placed on top of each other to make very thick walls. More mud is pressed between the bricks to keep them in place. In the hot season, the buildings are very cool. During the harmattan, the walls keep out the cool night air.

- Why are the walls of Hausa buildings so thick?

The floors are also made of mud, which is as solid as wood or cement. Each building has a thatched roof made from dried grass. The compound is kept spotlessly clean by the women and their children.

These buildings in a Hausa compound are made of dried mud bricks. How are these buildings suited to the environment?



Raffia Mats and Baskets

The fibres of raffia palm leaves are used for making mats throughout Nigeria. Raffia mats, or *karauno* (kar o' no), are especially popular in Hausaland. They are woven by Hausa men and boys. The mats usually measure about 1 m x 2 m, but they can be woven much larger. One mat might fit the whole floor of a market shed, for example.

Raffia palm leaves and elephant grass are woven together to make baskets. These baskets are used for storage, for carrying things and for displaying grains in the market.



Cuisine Française

Classic French cooking, or *cuisine française* (*kòwè zèn' frañsèz'*), is considered as one of the best in the world. Often people who want to become great chefs go to France to study with master chefs. French chefs and French restaurants can be found in almost every country in the world.

What is *cuisine française* like? French chefs emphasize fresh ingredients. They use many different herbs and spices to season their food and create special sauces for different dishes. They can make any part of any animal taste good. Dishes such as snails, frogs' legs and brains are famous in France. But French chefs also make good simple food, such as onion soup and beef stewed in wine.

Each part of France produces a different type of cooking. Chefs use food that is grown or produced in that region. In the south, cooks use tomatoes, garlic and onions. On the coast, they use a lot of seafood. Fresh vegetables are used wherever they are grown. Beef, lamb and pork are also cooked in different ways. Wherever you go in France, you will find a different cuisine.

Traditional French Foods

Anne-Marie and her family live in the French countryside. Many people who live in the country keep the same customs and habits that their ancestors followed. Many older people also keep these customs. This is the traditional way of living in France.

Traditionally, food is very important to the French. They spend more than one quarter of their income on food and drink. At mealtimes the whole family gets together for good food.

The quickest meal of the day is breakfast. The most common breakfast is French bread with butter and jam, or perhaps a *croissant* (*kriwò sàhn'*), and coffee made with hot milk.

Traditionally, lunch is the main meal of the day. If possible, family members eat together, taking their time over the meal. Lunch breaks may last two hours.

Lunch has several courses. First comes an appetizer, called an *hors-d'oeuvre* (*òf d'òvèr'*). It might be some cold meats or sausage, called *charcuterie* (*shàr kut' èr'*), a tomato salad or some other simple dish. Next comes the main dish, which may be a stew, a roast or another meat dish. It is usually accompanied by potatoes or rice and perhaps a green vegetable. The main dish may be followed by a small green salad. Cheese is usually served at the end of the meal, before dessert. Dessert may be as simple as fresh fruit. Or it might be an apple tart or a *crème caramel* (*krièm kah fah mèl'*). A *crème caramel* is like a custard topped with caramel. Sweet desserts, like cakes or pies, are usually saved for special occasions. Sometimes cheese, yogurt or other dairy products are served instead of dessert.

With this meal, adults usually drink wine. Even small children may drink wine mixed with water on special occasions. Usually children drink water or fruit juice with the meal.

People who work in town may go to a favourite restaurant every day for lunch. Usually they eat the special of the day, a three-course meal. The restaurant owner keeps their bottle of wine and brings it out each day for lunch.

After work, people often stop for a drink in a small *café* (*kah fè'*). They meet their friends and chat before going home for supper. Supper is a smaller meal than lunch. Often it is homemade soup, bread, cheese and a simple dessert, such as apple *compote*. Generally the French eat a lot of bread at mealtimes.

Because they eat so much bread, traditional French bread must be fresh. Traditional Frenchwomen shop for food every day. They buy freshly made bread at the baker's and vegetables, fruit and meat at the market or in small specialty shops.

- How are traditional French meals different from the meals you eat? What is the same?



Traditional French Clothing

Some French people wear traditional clothing. This style of clothing has not changed much since around 1900. In French cartoons, you see the typical Frenchman wearing either dark blue overalls or a loose, dark blue jacket and pants, with a *beret* (ba ra') on his head. The traditional dress for a Frenchwoman is a black skirt and a blouse with a blue apron on top, or a black dress.

This type of clothing is most often seen on older people in small towns or in the countryside. Manual workers also wear this type of clothing because it is sturdy and practical for hard work. People who work in offices often wear dark, formal clothing. Men wear suits and ties, and women wear good dresses or suits. Children go to school always dressed neatly. Boys often wear ties to school.

Traditionally, French people would rather spend money on one good dress or suit than on three or four items of poorer quality. They like clothing that will still look neat and stylish after many wearings.

Two American students attending college in France enjoy a traditional meal with their French hosts. How does this lunch compare with one that would be served in your home?

A man pauses on his walk down a quiet French lane. What is truth about the way he is dressed?



- What are the advantages of traditional French clothing?

Traditional French Housing

Anne-Marie's father is proud of his house, which was built more than 100 years ago in the traditional French style. It is a single-family house, with thick walls that can withstand the weather and the passage of time.

You can see many houses like this in French villages and in the countryside. Most are built of stone, and some have plaster and whitewash over the stone. The walls may be up to a metre thick. In the north, these walls keep out the cold and damp. In the south, they keep out the heat.

The most common roofing materials are slabs of grey slate or red tiles made of clay. The steepness of the roof depends on which part of the country the house is built in. These houses may be small, with just a room or two, or they may be large enough to hold a family of 10.

- Why does the steepness of the roof depend on the region where the house is located?

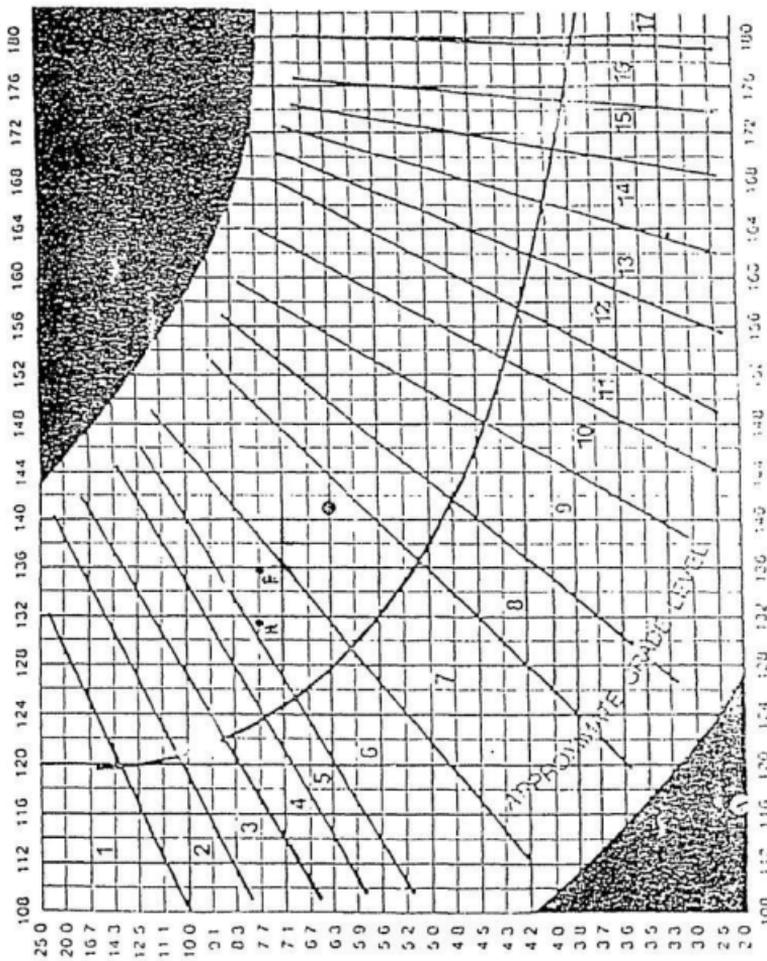
In larger towns and cities, houses are built of the same type of material but are often joined together. Usually they have a common wall that faces the street and is very close to it. Each house has several windows and a door that opens onto the street. Each also has a courtyard behind the house, where the family reads, gardens or plays games.

Fewer than half the French live in single-family homes, although most say they would like to. Houses built in recent years often follow the traditional plan. They may be built of cement blocks, but they are still whitewashed and roofed with red tiles. Some new houses, especially in mountain areas, are made of wood.



A farmer sits in front of his house. What traditional features of the house can you identify?

APPENDIX C



DIRECTIONS: Randomly select 3 one-hundred word passages from a book or article. Plot average number of syllables and average number of sentences per 100 words on graph to determine the grade level of the material. Choose more passages per book if great variability is observed. Do not include that the book has unpronounceable few books with light gray area but when they do have several they are in red.

Count per nouns, numerals and initials as words. Count a syllable for each symbol. For example: 1945 is 1 word and 4 syllables and 16A is 1 word and 3 syllables.

APPENDIX D

V: Vocabulary

Directions: In each exercise, you are to decide which one of the four answers has most nearly the same meaning as the word in heavy type above it.

Then, on the answer sheet, find the row of answer spaces numbered the same as the exercise you are working on. You are to fill in the answer space on the answer sheet that has the same number as the answer you picked.

The sample exercise in the box at the right has already been marked correctly on the answer sheet.

SAMPLE EXERCISE

- O. Scrub the clothes**
- 1) sell
 - 2) sew
 - 3) wash
 - 4) dry

Use this table to find where you begin.

Level 9: Begin with page 4, exercise 1.

Level 10: Begin with page 5, exercise 11.

Level 11: Begin with page 6, exercise 25.

Level 12: Begin with page 7, exercise 39.

Level 13: Begin with page 8, exercise 56.

Level 14: Begin with page 9, exercise 64.

LEVEL 9 BEGIN

1. A dusty trail
 - 1) path
 - 2) house
 - 3) field
 - 4) carpet
2. Chill the fruit
 - 1) cook
 - 2) cut
 - 3) mix
 - 4) cool
3. Her favorite dress
 - 1) oldest
 - 2) prettiest
 - 3) most-liked
 - 4) best-fitting
4. A bad odor
 - 1) smell
 - 2) sign
 - 3) fight
 - 4) sickness

LEVEL 10 BEGIN

5. Trace the picture
- 1) paint
 - 2) frame
 - 3) take
 - 4) copy
6. Overly worried
- 1) little
 - 2) too much
 - 3) somewhat
 - 4) not at all
7. Took his daily walk
- 1) all-day
 - 2) very slow
 - 3) everyday
 - 4) early morning
8. The ship's crew
- 1) workers
 - 2) lifeboats
 - 3) deck
 - 4) passengers
9. At the midway point
- 1) faraway
 - 2) halfway
 - 3) beginning
 - 4) turning
10. Harvest the oranges
- 1) peel
 - 2) squeeze
 - 3) pick
 - 4) plant
11. A silly grin
- 1) laugh
 - 2) speech
 - 3) joke
 - 4) smile
12. Create a machine
- 1) demonstrate
 - 2) build
 - 3) repair
 - 4) operate
13. To happen twice
- 1) often
 - 2) three times
 - 3) two times
 - 4) two at a time
14. Gripe about the loss
- 1) complain
 - 2) worry
 - 3) feel sorry
 - 4) talk
15. His savings shrank
- 1) increased
 - 2) were steady
 - 3) got smaller
 - 4) were stolen
16. On the surface
- 1) top
 - 2) table
 - 3) front
 - 4) shelf
17. A troubled person
- 1) bitter
 - 2) silly
 - 3) worried
 - 4) dishonest

TEST COLLECTION
 FACULTY OF EDUCATION
 SIMON FRASER UNIVERSITY
 BURNABY, B.C. V5A 1S6

18. To switch games

- 1) arrange
- 2) win
- 3) learn
- 4) change

19. A major expense

- 1) task
- 2) cost
- 3) donation
- 4) loss

20. Finely carved

- 1) very slowly
- 2) simply
- 3) deeply
- 4) expertly

21. A business zone

- 1) letter
- 2) area
- 3) address
- 4) activity

22. Numb the pain

- 1) ease
- 2) cause
- 3) ignore
- 4) add to

23. A helpless feeling

- 1) carefree
- 2) powerless
- 3) sad
- 4) painless

24. Occur tomorrow

- 1) be over
- 2) start
- 3) be ready
- 4) take place

LEVEL 11 BEGIN

25. Sketch the old barn

- 1) describe
- 2) photograph
- 3) tear down
- 4) draw

26. The public building

- 1) for the aged
- 2) open to all
- 3) for a company
- 4) easy to find

27. Oppose the tax bill

- 1) be against
- 2) vote on
- 3) offer
- 4) put into law

28. To cover the event

- 1) stop
- 2) go after
- 3) report on
- 4) watch

29. Strict rules

- 1) exact
- 2) unfair
- 3) newly passed
- 4) needed

30. A flaw in the plan

- 1) step
- 2) fault
- 3) detail
- 4) condition

LEVEL 11 STOP

LEVEL 12 BEGIN

31. A wilted plant
1) wild
2) creeping
3) withered
4) flowering
32. Pull a thigh muscle
1) upper leg
2) upper arm
3) lower back
4) lower leg
33. To grant a wish
1) think of
2) ask for
3) write down
4) make happen
34. A major product
1) costly
2) main
3) new
4) good
35. Unusual hardship
1) design
2) approach
3) location
4) difficulty
36. Notify a customer
1) assist
2) inform
3) promise
4) observe
37. Do a favor
1) chore
2) dance
3) kind act
4) stupid thing
38. Soundly built
1) solidly
2) poorly
3) quickly
4) easily
39. A blood donor
1) relative
2) giver
3) kind
4) disease
40. Pleasantly spoken words
1) carefully
2) quietly
3) harshly
4) nicely
41. Recycle the wastes
1) destroy
2) reuse
3) dump
4) haul
42. A busy port
1) harbor
2) staff
3) subway
4) airline
43. To obstruct the road
1) clear
2) build
3) block
4) travel along
44. A convenient location
1) handy
2) second
3) different
4) out-of-the-way
45. A clammy basement
1) dark and dry
2) dirty
3) messy
4) damp and cool
46. Residents of the desert
1) conditions
2) vegetation
3) inhabitants
4) homes

47. Determine the course

- 1) decide on
- 2) check
- 3) ask about
- 4) follow

48. Were chosen individually

- 1) as a group
- 2) one by one
- 3) in pairs
- 4) at certain times

49. A big portion

- 1) help
- 2) building
- 3) decision
- 4) piece

50. Gradual improvement

- 1) hoped for
- 2) rapid
- 3) slow and steady
- 4) expected

51. Beef broth

- 1) tender roast
- 2) thin slice
- 3) sandwich
- 4) clear soup

52. Convert to gas

- 1) add
- 2) resort
- 3) change
- 4) return

53. A dreaded disease

- 1) painful
- 2) feared
- 3) killing
- 4) spreading

54. The final phase

- 1) stage
- 2) statement
- 3) payment
- 4) meeting

55. To certify a pilot

- 1) train
- 2) employ
- 3) instruct
- 4) license

LEVEL 13 BEGIN

56. Added needless facts

- 1) unnecessary
- 2) valuable
- 3) incorrect
- 4) useful

57. With obvious enthusiasm

- 1) happiness
- 2) excitement
- 3) concern
- 4) success

58. Illustrate the problem

- 1) find a solution to
- 2) show concern for
- 3) provide examples of
- 4) argue about

59. Edible plants

- 1) toxic
- 2) eatable
- 3) healthful
- 4) nutritious

60. The company's policy

- 1) reputation
- 2) yearly report
- 3) general plan
- 4) product

61. A glaze of ice

- 1) thin coating
- 2) small piece
- 3) patch
- 4) cube

62. Unfailingly late

- 1) never
- 2) rarely
- 3) sometimes
- 4) always

63. Challenge an order

- 1) repent
- 2) obey
- 3) notice
- 4) question

LEVEL 14 BEGIN

64. Diagram of the field
- 1) analysis
 - 2) drawing
 - 3) shape
 - 4) dimensions
65. To cop out when it counts
- 1) act dishonestly
 - 2) oppose vigorously
 - 3) fail to support
 - 4) pitch in
66. Sparsely covered
- 1) adequately
 - 2) thinly
 - 3) warmly
 - 4) completely
67. An efficient process
- 1) elementary
 - 2) impractical
 - 3) often repeated
 - 4) effective
68. The first symptom
- 1) disorder
 - 2) report
 - 3) indication
 - 4) process
69. Dilute the mixture
- 1) stir
 - 2) measure
 - 3) pour
 - 4) weaken
70. A clever slogan
- 1) motto
 - 2) poster
 - 3) title
 - 4) idea
71. An attentive audience
- 1) apathetic
 - 2) impatient
 - 3) observant
 - 4) energetic
72. Lure the animal
- 1) ensnare
 - 2) entice
 - 3) muzzle
 - 4) pursue
73. A guilty verdict
- 1) judgment
 - 2) belief
 - 3) confession
 - 4) appearance
74. The main culprit
- 1) source
 - 2) actor
 - 3) reason
 - 4) offender
75. An internal part
- 1) important
 - 2) imperfect
 - 3) inside
 - 4) optional
76. Gauge the distance
- 1) lengthen
 - 2) estimate
 - 3) span
 - 4) mark
77. Received a windfall
- 1) piece of good fortune
 - 2) serious injury
 - 3) deserved compliment
 - 4) weather prediction
78. Repel the bugs
- 1) kill
 - 2) spray
 - 3) trap
 - 4) drive away
79. Intricate instructions
- 1) complex
 - 2) confusing
 - 3) vague
 - 4) specific



80. Eat the tortilla
 1) French bread
 2) Mexican pancake
 3) Italian sandwich
 4) German dessert
81. A courteous reply
 1) curt
 2) quick
 3) polite
 4) cautious
82. The soup was simmering
 1) slowly cooling
 2) reflecting light
 3) very thick
 4) barely boiling
83. Counterfeit tickets
 1) unused
 2) imitation
 3) faulty
 4) extra
84. A stout cable
 1) surface
 2) metal rope
 3) capture net
 4) antenna mast
85. For the last decade
 1) 90 days
 2) 26 weeks
 3) 10 years
 4) 100 years
86. Culled the worst ones
 1) picked out
 2) talked about
 3) gave away
 4) refused
87. Synthetic fibers
 1) natural
 2) low quality
 3) made by humans
 4) smooth and shiny
88. Pulverize the soil
 1) crush
 2) level
 3) remove
 4) fertilize
89. Accused of treason
 1) lying in court
 2) forging checks
 3) using another's name
 4) betraying one's country
90. Enrich the bread
 1) refine
 2) increase cost of
 3) add nutrients to
 4) add flavor to
91. Concur with the decision
 1) quarrel
 2) disappointed
 3) end
 4) agree
92. A feasible schedule
 1) shortsighted
 2) poorly planned
 3) workable
 4) popular
93. Looked at with enmity
 1) hatred
 2) fear
 3) horror
 4) amusement
94. Tantalize the audience
 1) tease
 2) inspire
 3) assure
 4) entertain
95. Aptitude for mechanics
 1) desire
 2) talent
 3) preparation
 4) requirement
96. A staunch supporter
 1) vocal
 2) thoughtful
 3) helpful
 4) steadfast
97. Relish the meal
 1) prepare
 2) serve
 3) enjoy
 4) look forward to
98. A sticky residue
 1) glue
 2) repair patch
 3) situation
 4) remainder
99. Perceptive statements
 1) distorted
 2) insightful
 3) defensible
 4) inaccurate
100. To condone their rudeness
 1) overlook
 2) criticize
 3) protest
 4) correct
101. Famine in the country
 1) poverty
 2) shortage of food
 3) living conditions
 4) crop damage
102. Compatible styles
 1) harmonious
 2) contrasting
 3) informal
 4) influential
103. An interesting excursion
 1) project
 2) original idea
 3) experience
 4) short journey
104. Garnish the salad
 1) add spices to
 2) toss
 3) decorate
 4) chop finely



