

TEACHING PARAPHRASING TO IMPROVE READING COMPREHENSION

by

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## ABSTRACT

This study set forth to develop and field test a grade five Social Studies instructional unit on the Gold Rush in British Columbia that was designed to teach students to recognize and construct semantic and syntactic paraphrases in an effort to raise their comprehension of Social Studies content. The evaluation component was to determine whether instruction in paraphrasing improved significantly the students' skills in:

- i. paraphrasing,
- ii. comprehension and memory of the content knowledge of the Gold Rush,
- iii. general reading comprehension.

After the instructional unit and performance measures were developed and piloted, ten grade five classes were randomly selected in one school district. All ten classes were pre-tested on paraphrasing, content knowledge of the unit and general reading comprehension. Five classes, randomly designated as the control group, were taught the unit using the teachers' customary methods. The other five teachers taught the unit instructing students in semantic and syntactic paraphrasing skills as well as in content knowledge. All teachers adhered to 220 instructional minutes per week and the reference books and materials on the unit were available to both groups. Students were post-tested with the three pre-tests.

Statistical analysis of the data (ANCOVA) indicated that there was no significant post-test difference in paraphrasing skills between the experimental and control groups ( $F = .41$  ,  $p = .55$  ). Students in both groups used predominately syntactic paraphrasing rather than a combination of syntactic and semantic paraphrasing. In addition, on the tests of knowledge of the Social Studies unit and on the tests of general reading comprehension, the experimental group did not significantly outperform the control group ( $F = .34$  ,  $p = .58$  ;  $F = .61$  ,  $p = .47$  ).

The absence of effects on the students' ability to paraphrase suggested a number of modifications in the experimental curriculum design. For future investigations, specifically, closer attention must be paid to the instructions of the paraphrasing tests and to the order in which the paraphrasing skills are taught.

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CHAPTER I  
INTRODUCTION

BACKGROUND

The obvious in learning is sometimes neglected. Although students are frequently asked by teachers to write or speak an answer in their own words, they rarely are given any training in paraphrasing (Parke, 1978). The assumption by many teachers is: if the students comprehend a statement, then they possess the ability to paraphrase. If paraphrasing is a cognitive skill expected of all students, then teaching students the skills of recognizing and constructing paraphrases is to give them one of the tools to actively process the content of a subject.

Recent findings on understanding texts from the fields of: cognitive psychology (Anderson et al, 1977; Vygotskii, 1967); generative-transformation grammar (Chomsky, 1965); computer simulation of mental processes (Posner, 1978) view comprehension as a process that involves information processing skills, concept development, language, perception, and motivation. Therefore, there is a strong likelihood that instruction in a content subject should develop cognitive processes as well as transmit knowledge.

Most educators have not yet realized that the ability to paraphrase is the competence to recognize "equivalence in

meaning among two or more linguistic units" (Pearson and Johnson, 1978, p. 128), and then to express, in oral or written form, an equivalent statement that involves substitution of words (semantic paraphrasing) and/or rearrangement of words (syntactic paraphrasing). The complexity of the cognitive skills involved in paraphrasing begins to emerge (Kamm, 1979).

The researcher, however, who wants to design an instructional unit to teach paraphrasing skills to students is on very tenuous ground. No studies identified, so far, have been completed on the results of teaching paraphrasing and very little research has originated on the dimensions of paraphrasing skills.

In the classroom, if teachers are asked what they teach in a curriculum subject, such as Social Studies, their replies frequently indicate a preoccupation with the content of the programme. Statements such as, "Students must learn the capital cities of Canada, the mining resources of British Columbia, the Voyageurs", reveal a desire to teach knowledge of content. This emphasis on content knowledge neglects the development of cognitive skills that would assist students to learn content more efficiently and independently. In contrast to the teaching reality in the classroom, many Social Studies curriculum resource books propose that the teaching of cognitive skills is the responsibility of every Social Studies teacher (Burrton and Clayburgh, 1974; Kenworthy, 1969; Moffet, 1977; Saylor and

Alexander, 1974). Similarly, the draft proposal of British Columbia's new Social Studies curriculum states that students should "know and understand the diverse patterns of human activity in the world"..... through the exercise of comprehension skills (B.C. Ministry of Education, p. 168). It appears that the Social Studies resource books and the draft Social Studies curriculum are based on the framework that (a) the teaching of a cognitive skill, or process, will assist in the understanding and memory of content knowledge, and (b) curriculum tasks, that promote cognitive processes, will "outlive the problems or concepts they were developed from" (Eisner, 1979, p. 53).

Helping to bridge the gap between content knowledge and skills, or processes, is a curriculum design that is oriented to process not content. In designing such a curriculum the researcher selects a specific skill, such as paraphrasing, and a topic (for example, the British Columbia Gold Rush). Goals and objectives are selected for comprehension skills and for content. Then the objectives to teach content are combined with those to teach comprehension skills. Sequential teaching activities are planned. Techniques are designed to evaluate or assess student achievement and progress.

However, considerable time is required for individual teachers to develop this type of curriculum design. Surrey School District has published some teacher developed Social

Studies units combining content with comprehension skills. (Langford, 1975). However, field testing is not a usual component of teacher or school district unit development.

#### STATEMENT OF THE PROBLEM

It should be apparent from the foregoing that the development and testing of curriculum designs that are characterized by an orientation toward process constitutes a valuable, albeit time-consuming, activity in assisting teachers to deal better with the teaching of content and skills.

This study sets forth to develop and field test a grade five Social Studies curriculum unit on the Gold Rush in British Columbia that teaches students to recognize and construct semantic and syntactic paraphrases in an effort to raise their comprehension of the content knowledge of the Gold Rush. The evaluation component is to determine whether instruction in paraphrasing improves significantly the students' skills in:

- i. paraphrasing,
- ii. comprehension and memory of the content knowledge of the Gold Rush,
- iii. general reading comprehension.

## DEFINITION OF TERMS

The following terms will be used, as defined, in this study.

### Paraphrasing

There are two types of paraphrasing: semantic and syntactic. The competence to recognize and then to express, in oral or written form, equivalence in meaning among two or more words, such as flumes and ditches, is semantic paraphrasing. Syntactic paraphrasing is the recognition of the equivalence in meaning of sentences that have a different order of words with or without semantic paraphrasing. The student would recognize that the following two sentences have approximately the same meaning.

- i. The stout woman sliced the turkey.
- ii. The turkey was sliced by the stout woman.

### Concept

Concepts are major understandings that a student should know at the conclusion of the unit (Tierney, Readence, and Dishner, 1980, p. 73-74). Some major concepts within the Gold Rush unit, selected for use in the present study, were: various methods of mining for gold, life of the miners on the Fraser, characteristics of a mining town in British Columbia.

## Schemata

Knowledge derived from experiences is organized in memory as a collection of concepts and associations among concepts. These clusters of knowledge are known as memory schemata (Anderson, 1977.; Thorndyke and Hayes-Roth, 1979; Milligan, 1979, Aiken and Williams, 1973). Schemata are developed "from experience through a process of abstracting common characteristics of diverse events" (Tuinman, 1980, p. 416). For instance, a student's schema of a classroom involves the general layout of the room - desks, tables, chalkboard, display and filing cabinets, bulletin boards, the schedule of the day's activities, the behaviours of teachers. The student's schema has been developed by repeated experiences with classrooms.

## Instructional Unit

This curriculum, founded upon the contention that the curriculum should be concerned with process, is also reflective of the assumption that there are general intellectual skills that can be applied to any subject matter (Eisner and Vallance, 1974). A comprehension skill, such as paraphrasing, is the same whether the topic is "The History of the Gold Rush" in Social Studies or "Where Do Stories Come From?" in Reading.

This curriculum is organized on a specific model -- the unit in which: goals and objectives are set, teaching activities and materials to reach those goals and objectives are developed,

and evaluation procedures are suggested. (Nicholls and Nicholls, 1978). In designing a series of developmental teaching activities, the content and skills must be broken into manageable chunks. These chunks will comprise for the learner the "basic units of memory for particular incidents" (Chafe, 1977, p. 42). The Gold Rush unit has chronological and developmental knowledge chunks, called sections:

Discovery of Gold in B.C.

Life of Miners Along the Fraser River.

Routes to Gold in the Cariboo.

A Specific Mining Town, Barkerville, in the Cariboo.

Results of Gold Rush in B.C.

Similarly, paraphrasing skills are broken into developmental sequence:

Identification of Individual Semantic Paraphrases

Construction of Individual Semantic Paraphrases

Identification and Construction of Semantic Paraphrases of Key Groups or Words

Arrangement of Paraphrased Key Group of Words Under Main Headings in an Outline

Identification of Syntactic Paraphrases of Sentences

Construction of Syntactic Paraphrases of Sentences

Construction of Main Headings That Paraphrase Questions

Construction of Questions That Paraphrase Main Headings

Use of Paraphrased Questions

Construction of Semantic and Syntactic Paraphrases



## Construction of Syntactic Paraphrases of Sentences With Connecting Words.

### LIMITATIONS

Certain limitations had to be considered in the design of this study:

- i. "Teacher" variability in teaching styles will affect results. Because ten classes are involved in the study, it is impossible to completely regulate teachers' behaviour in their use of the instructional unit.
- ii. Events occurring in the learning environment at the same time will affect students' knowledge of content and skills. If the experimental group of students simultaneously experience stress from an external event at the time of the study, the outcomes of the study may not truly reflect the experimental instructional unit.
- iii.  
Bias on the part of the experimental group of teachers. This has been documented by Rosenthal (1966). If the experimental teachers believed the curriculum to be special, then they may behave in such a way as to affect student performance.
- iv. Field-testing of the curriculum unit will be done in a

non-laboratory setting. The field-testing will be done as instructional research in which the researcher has minor control over the learning environment, teacher and student behaviours.

- v. Finally, generalizability of results to alternative curriculum units may be limited.

## CHAPTER II

### LITERATURE REVIEW

#### INTRODUCTION

To teach a student the skills of recognizing and constructing paraphrases is to give the student one of the tools to actively process the content of a subject. Instead of being a very discrete comprehension skill, paraphrasing requires the inter-relationship of comprehension and expression skills, experience and memory, problem solving and creative abilities.

Before a curriculum unit on paraphrasing can be constructed, the researcher must have the following:

- i. a conceptual framework for the curriculum design;
- ii. an understanding of instruction in comprehension;
- iii.

- a knowledge of the process of paraphrasing;
- iv. an understanding of the influences on the ability to paraphrase.

## CONCEPTUAL FRAMEWORK FOR CURRICULUM DESIGN

A decade ago, a question common in student slang -- "Where are you coming from?" -- asked a person to reveal his or her assumptions. This question is important in curriculum design because the answers will uncover a person's assumptions on curriculum design.

Assumptions shape one's view of learning and assist in determining curriculum emphasis (Egan, 1978; Eisner and Vallance, 1974). In other words, assumptions stress "a particular conception of educational priorities" (Eisner, 1979, p.71) and these priorities clarify ideas on purposes, content, learning activities and evaluation in the curriculum design.

The Gold Rush Unit is founded on the assumption that the "How" rather than the "What" is the most important key to student learning. Curriculum design must then emphasize process rather than content. Curriculum should help students to learn how to comprehend, how to organize knowledge, how to solve problems, how to remember, how to correct errors in understanding (Posner, 1978). All human beings are processors of information and the process of learning is one in which the learner plays an "active, not a passive role" (Tyler, 1977). Therefore, a curriculum design, founded on process, should provide opportunities for students to employ and develop the variety of intellectual and comprehension skills that they

innately possess. (Eisner, 1979).

When the foundation of a curriculum design is content, the design is centered upon the subject or content (Zais, 1976). Concepts and facts are often learned in isolation; the student is rarely assisted with integration of autonomous bits and pieces of content. A curriculum design oriented upon content assumes a passive learner (Zais, 1976) -- a learner who absorbs the concepts and facts given by the teacher. Learners may only accidentally perceive "the way in which things they learn can be learned" (Tyler, 1977, p. 38). The plentitude of knowledge, or content, that surrounds students in the last several decades points out the absurdity of schooling for content knowledge only.

Instead, curriculum design reflecting the assumption that there are general intellectual and comprehension skills that can be applied to any subject gives students the tools to process any content (Eisner, 1979; Eisner and Vallance, 1974; Dukacz and Babin, 1980). These intellectual and comprehension skills are the same whether the subject content is "The Importance of the Gold Rush" or "Analyzing Rocks". The important aspect is the skill learned, not the content. Specific comprehension skills are strengthened through activities especially designed for the use of these skills (Eisner, 1979). The teacher assesses whether students can perform:

- i. specific intellectual operations: classification,

hypothesis, analysis, divergent or convergent production, evaluation (Guilford, 1967);

- ii. specific comprehension skills -- both literal and interpretative.

These intellectual and comprehension skills are seen as transferrable to a variety of new sets of circumstances (Eisner, 1979; Eisner and Vallance, 1974; Dukacz and Babin, 1980).

### INSTRUCTION IN COMPREHENSION

Durkin's study of "finding, describing and timing comprehension instruction" (Durkin, 1978-79, p. 484) in grades 3 through 6 Reading and Social Studies concludes that very little time (less than one percent) is spent on comprehension instruction. Comprehension instruction was observed only in 28 out of the 4,469 minutes during reading (p. 497) and no comprehension instruction was observed during the 2,775 minutes of Social Studies (p. 503).

Comprehension instruction is defined by Durkin as whatever the teacher does or says to help children "understand or work out the meaning of more than a single, isolated word" (1978-79, p. 488).

Durkin finds teachers to be questioners, assignment givers, and assignment checkers instead of instructors. This conclusion that comprehension instruction is not well developed in the

classroom is supported by informal discussions with teachers. When teachers are asked what they teach in Social Studies, many of their replies indicate a preoccupation with content.

This traditional emphasis on content knowledge neglects the development of specific reading comprehension skills that would assist students to learn the content more efficiently (Durkin, 1978-79).

In contrast to the teaching reality in the classroom, many authors of Social Studies curriculum textbooks have proposed that the teaching of comprehension skills is the responsibility of every Social Studies teacher (Kenworthy, 1969; Moffet, 1977; Saylor and Alexander, 1974).

In a follow-up study to observing comprehension instruction in classrooms, Durkin analyzed the manuals of five basal reading programs, kindergarten through grade six, for their suggested strategies to teach comprehension (1981). She found that the lack of comprehension instruction in the classrooms mirrors the lack of explicit directions in the manuals on how to teach comprehension. Instead of direct comprehension instruction, the manuals provide application and practice exercises along with assessment materials. Because the lack of comprehension instruction exists in expository discourse as well as the narrative discourse in the basal readers and no evidence of comprehension instruction was found in the earlier study during the 106 hours of observing Social Studies (Durkin 1978-79), then

this dearth of instruction in comprehension provides a clue as to the reason why students have difficulty understanding and remembering the content of Social Studies.

### THE PROCESS OF PARAPHRASING

Paraphrasing appears to be quite a simple process on the surface, but, in fact, is complex. When a person is presented a sentence such as, "The small pieces of gold in the gold pan were carefully placed into the miner's leather bag", and is asked to paraphrase, Pearson and Johnson (1978) assume that the person has:

- i. the motivation to read;
- ii. the linguistic ability to read and comprehend;
- iii. the knowledge of word meanings;
- iv. the ability to recognize syntax, or the orderly arrangement of words in a sentence;
- v. memory or recall ability;
- vi. the associative skills of cognition to relate the semantic and syntactic units of meaning to units of similar meaning within his/her general knowledge;
- vii. the oral and/or written skills to express a statement that is semantically and/or syntactically similar.



Little research has been completed on the psychological nature of the paraphrasing process. Instead, research has concentrated on discrete elements around the process of paraphrasing: semantic versus syntactic recall, the effects of syntax or semantics on comprehension and memory.

Mehler completed a study on the effects of grammatical transformations on the recall of English sentences (Mehler, 1966). His hypothesis was that semantic components of meaningful sentences were easier to recall than specific grammatical details. Subjects were given a test of recall of eight short sentences which differed grammatically. Responses were scored both for semantic accuracy and for syntactic accuracy. He found that students did not recall sentences verbatim. They separated the semantic content from the syntactic form and remembered the general significance of a sentence, not the specific words.

Two years later, the Clarks observed that people, "when asked to remember a sentence verbatim, often erred by recalling a paraphrase of that sentence" (Clark and Clark, 1968, p. 129). At that time they had completed a study to determine whether memory for sentences had a semantic, rather than a syntactic basis. The subjects were presented with noun clues and asked to recall the complex sentence. Subjects remembered the underlying sense of the sentence but they noted that errors within clauses resulted from substitution of synonyms for single words -- in other words, semantic paraphrasing.

In a recent study on semantic paraphrasing students were asked to orally recall a story that had been read to them (Stein and Glenn, 1979). Very few sentences were recalled as in the original story but were semantically paraphrased. Sixty percent of all statements recalled had verb substitutions. Adjectives were deleted consistently. In addition, it was noted that fifth graders produce more statements than first graders in the study.

This study supports the previous research that indicates that people, when recalling units of meaning, semantically paraphrase the units of information without direction being given to do so. The observation that fifth grade students produce more recall statements than first graders hints at the assumption that the greater the general knowledge a student has, the greater the recall. This assumption will be explored in the final part of the literature review.

Another study, in contrast to the previous ones, proposed to show that syntax had a significant effect on recall of sentences (Blumenthal and Brooke, 1967). The examiner read each sentence three times to the subject and then the subject was to paraphrase the sentence and then to repeat it in its original form. The results indicated that the organization of the recall of the sentences depended on the nature of the grammatical relations among the sentence parts. This study concluded that the syntax of a statement was the most important factor in recall.

To determine the effects of the structure, or syntax, of prose passages on memory and comprehension, Thorndyke designed two experiments (Thorndyke, 1977). In the first experiment students were given, visually and auditorially, eight stories, equal in content, but differing in narrative structure (story, narrative after theme, narrative-no theme, and description). After exposure to each story the students were to write a concise summary of the story as they recalled it. Then the students were given a recognition test of factual and inferential sentences. The results indicated that there was a relationship between recall and the structure of the passage. Recall was highest on the story and became progressively less through narrative-after theme, narrative-no theme, and description. More information was retained from the less structured passages. In their summaries, students included basic units of thought from the passages, but not lower level details.

Research, therefore, has concentrated on the discrete conditions when either semantic or syntactic paraphrasing occurs rather than investigating the process of paraphrasing or the outcomes of instructional conditions on the ability to paraphrase.

## INFLUENCES ON THE ABILITY TO PARAPHRASE

As delineated in "The Process of Paraphrasing", paraphrasing requires linguistic knowledge - understanding and use of phonological, semantic and syntactic skills. Paraphrasing requires not only this linguistic knowledge, but also general knowledge (Tuinman, 1977; Royer and Cunningham, In Press; Royer, Sefkow and Kropf, 1977; Royer, Hambleton and Cadorette, 1978). A person's general knowledge structure is established from "repeatedly encountering and being asked to recall information sharing semantic and conceptual similarities" (Royer, Hambleton and Cadorette, 1978 p. 189).

One view of how general knowledge affects comprehension is found in schema theory. Rumelhart and Ortony (1977), Schank and Abelson (1977) using the term script, Thorndyke and Hayes-Roth (1979); Milligan (1979); Aiken and William (1973) theorize on how schemata influence the understanding process. Schemata can be described as a clustering of "memory representation" (Pearson and Johnson, 1978, p. 35) of all types and examples of specific concepts.

Schemata are developed "from experience through a process of abstracting common characteristics of diverse events" (Tuinman, 1980, p. 416). A student's schema of a classroom involves the general layout of the room -- desks, tables, chalkboard, displays and filing cabinets, bulletin boards, the

schedule of the day's activities; the behaviours of teachers -- and has been developed by repeated experiences within classrooms.

Royer and Cunningham postulate that schemata influence comprehension by facilitating the memory process and filling in "missing content essential for complete understanding" (In press, p. 11). They portray schemata as a "pre-established structure for recording the content of an event" (p. 11).

To refer back to the classroom example: if a student reads a narrative with a classroom setting and has the pre-established mental structure of a classroom in his/her memory, then comprehension of the narrative, according to schema theory, is easier.

In addition to the effect of general knowledge, specific studies have linked mental ability with the ability to comprehend and to paraphrase (Bransford and McCarrell, 1974; Ruddell 1978; Guszak, 1978).

Geer, Gleitman and Gleitman's study, "Paraphrasing and Remembering Compound Words", reveals that differences in paraphrasing three-term compound words is not attributable to the ability to apply compounding rules from memory or to differing memory capacities but to general mental ability (1972). Higher ability students learn more because they possess the innate capacities for more general knowledge than students of lower ability (Royer, Hambleton and Cadorette, 1978).

Therefore, the intertwining of a person's linguistic knowledge, general knowledge and mental ability influence the capacity to paraphrase.

#### SUMMARY

The curriculum design of the unit, The Gold Rush in British Columbia, stresses the "How" rather than the "What"; the process of paraphrasing is believed to assist students to understand and remember the content knowledge of the Gold Rush. This curriculum provides activities for students to develop and employ paraphrasing skills to learn the concepts and facts on the Gold Rush.

In addition, these skills of paraphrasing are thought to be transferrable to general reading comprehension and other subjects. This orientation of the curriculum design facilitates the development of paraphrasing skills that are employable in specific situations in many other curricula.

The Gold Rush unit, a curriculum design emphasizing process, seeks to find answers to three specific questions: Does instruction in paraphrasing improve significantly students' skills in:

- i. paraphrasing,
- ii. comprehension and memory of the content knowledge of the Gold Rush,
- iii.

general reading comprehension?

Although there are many other questions that the curriculum design could probe, the importance of these three questions lies in their ability to provide some clues into whether direct instruction on a very specific comprehension skill improves students' ability to process. In other words, does direct instruction in paraphrasing improve students' skills to paraphrase, to comprehend, to remember and recall knowledge?

## Chapter III

### METHOD

#### Subjects and Setting

Ten grade five classrooms, comprising of 258 students, in a large lower mainland school district served as the population for this study. These classrooms were selected from five randomly selected elementary schools. Schools that had split grade five classrooms were eliminated from the selection process. Five of the classrooms were randomly designated as the experimental group who would use the instructional unit, The Gold Rush in British Columbia, while the remaining five classrooms were the control group.

Teachers' experience in the experimental classrooms ranged from zero (two first year teachers) to fifteen years' experience. Control teachers had from four to 12 years of teaching experience. Teachers had an average of 27 students in each class.

Grade five pupils were heterogeneously grouped with students of varying abilities in the experimental and control classrooms. All pupils in each classroom participated in the



study.

### The Instructional Unit

The grade five Social Studies instructional unit, The Gold Rush in British Columbia, was oriented to process. The curriculum was designed to teach the skills of semantic and syntactic paraphrasing as well as content knowledge to lead to student understanding of the nature and results of the Gold Rush in British Columbia.

The unit was organized into six institutional sections:

- i. Discovery of gold in British Columbia
- ii. Methods of mining for gold
- iii.

Miners along the Fraser River

- iv. Routes to gold in the Cariboo
- v. Barkerville: A mining town in the Cariboo
- vi. Results of the gold rush in British Columbia.

Each of the these instructional sections had the same structural format. Firstly, learning outcomes for content knowledge and paraphrasing skills were the starting point of each section. Secondly, all prescribed and supplementary references for the specific topics of that section were outlined. In addition, all related materials and/or resources, such as activity sheets, films, filmstrips, audio-visual

equipment, and found objects were listed. Then a paragraph that presented a thumbnail sketch of the core knowledge to be taught in this section was included under the heading, Teacher Information. Next an introductory activity was detailed to motivate and and build common experiences in the students. Subsequent highly structured teaching activities with related activity sheets were outlined to assist the students to learn a chunk of knowledge and the skill of paraphrasing. A culminating activity was suggested. The instructional unit, The Gold Rush in British Columbia, is included in Appendix I

As the content knowledge was broken down into manageable chunks and distributed among the six instructional sections, so were the paraphrasing skills analyzed into a developmental sequence. Instruction began with the basic step of paraphrasing individual words (semantic paraphrasing) and then moved to paraphrasing statements and questions (syntactic paraphrasing). Final activities required both semantic and syntactic paraphrasing. The sequence of the paraphrasing skills were:

Identification of Individual Semantic Paraphrases

Construction of Individual Semantic Paraphrases

Identification and Construction of Semantic Paraphrases of Key Groups or Words

Arrangement of Paraphrased Key Groups of Words Under Main Headings in An Outline

Identification of Syntactic Paraphrases of Sentences

Construction of Syntactic Paraphrases of Sentences

Construction of Main Headings That Paraphrase Questions

Construction of Questions That Paraphrase Main Headings

Use of Paraphrased Questions

Construction of Semantic and Syntactic Paraphrases

Construction of Syntactic Paraphrases of Sentences With Connecting Words

Because the basic assumption of the instructional unit was that the teaching of paraphrasing skills using the content knowledge of the Gold Rush would assist students to understand and to remember the content, the learning outcomes of the unit were to demonstrate comprehension of content knowledge through the use of paraphrasing skills. The unit was designed so that students would be able to:

- i. Recognize the meaning of specific Gold Rush vocabulary by constructing semantic paraphrases of vocabulary words used in sentences.
- ii. Explain three basic processes of gold mining after:
  - 1) identifying key groups of words in sentences;
  - 2) arranging key groups of words under provided main headings of an outline;
  - 3) writing semantic paraphrases for key groups of words in an outline.

iii.

Outline the basic equipment that a miner would need in 1859 by identifying and constructing sentences that are

syntactically paraphrased.

iv. Define the problems of miners along the Fraser River by:

- 1) constructing main headings that are paraphrases of questions;
- 2) dramatizing a problem and orally paraphrasing the incident.

v. Define the modes of transportation to the Cariboo by:

- 1) the construction of paraphrased questions of given main headings;
- 2) the research for specific details to answer the paraphrased questions.

vi. State the significance of roadhouses by:

- 1) constructing paraphrased questions of given main headings;
- 2) researching for specific details to answer paraphrased questions;
- 3) writing an evaluatory statement.

vii.

Outline the problems and the significance of the Royal Engineers' construction of the Wagon Road by:

- 1) employing paraphrased questions beside text selection to collect specific details for given main headings in an outline.
- 2) paraphrasing semantically the specific details for the outline;

viii.

Write five characteristics of Barkerville, a mining town in the 1800's, by:

- 1) constructing semantic and/or syntactic paraphrases of headlines and advertisements taken from a Barkerville newspaper, June 17, 1864;
- 2) constructing semantically paraphrased details for a given outline.

ix. Outline the results of the Gold Rush by constructing syntactic paraphrases of sentences with connective words.

Variety was the basic tenet for instructional activities throughout the six major sections. Instruction encompassed brain-storming, inductive and deduction teaching, demonstration, individual research, working with a partner, small group discussion, films, dramatization, and games.

#### Evaluation Instruments

Three tests, developed for the purpose of conducting this study, were administered before and after the instructional unit to all subjects.

#### Knowledge Test of the Gold Rush in British Columbia

Using true/false statements, multiple choice, fill in the blank answers, sentence completions and full statement answers,

the test measured the degree of student learning with questions on the Gold Rush that required knowledge, comprehension, analysis, synthesis and evaluation (Bloom, 1956) This 49 item criterion-reference test was based on the learning outcomes of knowledge set for the instructional unit. The reliability coefficient, using KR-21, ranged from .75 to 1.01 with a median of .89 .

### Sentence Test

This test consisted of seven sentences which could be semantically and syntactically paraphrased. Students were directed to write the sentences in their own words. Only one sentence of the seven referred to the gold rush. The answer key listed all possible paraphrases for each answer. The KR-21 on the sentence test ranged from .51 to .72 with a median of .60

### Comprehension Test

This test comprised of four reading selections ranging in length from 107 to 150 words. Fry's readability measured each at the grade five level. For each reading section two to four paraphrased questions were posed in progressive difficulty at the knowledge and inference levels. The content topics of the reading selections were varied: prison camp, mining for gold, science fiction, and pioneer travel. The Kuder-Richardson Formula 21 used to calculate the reliability on the total items of the test ranged from .52 to .74 with a median of .67

These tests were administered by each individual teacher using detailed, explicit instructions. Tests and instruction sheets are included in Appendix II.

#### Este's Reading Attitude Scales

In addition to the above tests, the Este's Reading Attitude Scale was administered during the post-tests. The scale consisted of fifteen Likert type items. The summing of the reading scale produced a score between 15 and 75, with the upper scores indicating a positive attitude.

#### Interview Instrument

After the post-tests were completed, twenty-five randomly selected students from the experimental classes were interviewed using an unstructured response interview probe in which the curriculum developer recorded students' oral responses. Within this group there were nine students of above average ability, nine of average ability, and seven of below average ability. Ability was reported by each student's teacher. Identical questions probed what the student had learned, what the student believed they could do better, what they like and disliked about the unit. Student responses were transcribed verbatim and later categorized and summarized according to the student's ability.

The interview probe can be examined in Appendix III.

### Design and Methods of Statistical Analysis

The design for this study was a pre-test and post-test design as described above. The variables considered were content knowledge of the gold rush and sentence paraphrasing skills. To determine the mean internal consistency coefficient of each pre- and post-test the Kuder-Richardson Formula 21 was calculated; to ensure some degree of inter-rater reliability of the paraphrasing test two examiners evaluated the pre and post sentence paraphrasing tests.

The adjusted class mean for each of the tests in knowledge, paraphrasing and reading comprehension was used as the unit of analysis. The pre-test scores of each test were used as covariates. The attitude scores of the experimental and control groups were analyzed by means of a simple t-test for uncorrelated groups.

### Procedure

The grade five instructional unit, The Gold Rush in British Columbia, and the three test instruments on knowledge, paraphrasing, and reading comprehension were developed approximately four months before the field phase of the study commenced. The evaluation instruments were piloted in one randomly selected grade five classroom so that the instruments' clarity, consistency, and time requirements could be assessed. Modifications were then made.



The major emphasis in the procedure was the field-testing of the curriculum design to assess whether instruction in paraphrasing improved significantly students' ability to paraphrase, to understand and recall content knowledge of the Gold Rush and to generally comprehend.

The field-testing of the curriculum design was recognized to be instructional research in which the researcher had relatively little control over teacher and student behaviours and the learning environment.

The field test for the curriculum unit consisted of seven components:

- i. pilot of curriculum unit and evaluation components in one classroom;
- ii. random assignment of experimental and control teachers;
- iii.

orientation and inservice was provided to both groups of teachers;

- iv. pre-tests of students;
- v. experimental teachers used the curriculum unit while control teacher taught as they normally did;
- vi. post-test of students and interview of twenty-five students from the experimental classes.
- vii.

debriefing session of teachers.

The following description in the procedure of the study fully

outlines each component of the field-test.

In a school that would not be involved in the research study, a grade five classroom was selected to pilot the instruction unit, the test instruments, and the implementation process. The materials were given to the teacher ahead of time to prepare any questions or concerns. Within the following week, the researcher met with the pilot teacher to explain the philosophical framework of the unit; the procedure of the pre-test, unit study, post-test; the information sought in the pilot; the directions for testing; the concerns and questions raised by the teacher. During the pilot, the researcher met weekly with the teacher to analyze strengths and weaknesses within the unit and the time required to complete each section of the unit. Students were informally asked about what they had learned and students' work was examined. Revisions were made on the instructional unit as required. Subsequent to the post-tests, five students were interviewed using the interview probe.

After the experimental and control teachers were randomly assigned in the study, each teacher and the principal of each school involved was visited to be introduced to the procedure of the study and confirm the timing of the study. The study was planned to coincide with the time in which teachers normally taught the Gold Rush unit in grade five Social Studies.

About two weeks before the study, experimental and control teachers attended an in-service session together to become knowledgeable of the content of the Gold Rush to be examined, the procedure of the study, and the testing directions. In a separate session the experimental teachers had further in-service to become aware of the philosophical framework of the instructional unit and to become knowledgeable of the structure and teaching strategies used in the unit. Appendix IV outlines the training process.

All 258 students were administered the Gold Rush knowledge, sentence paraphrasing, and reading comprehension pre-tests. Then the five control classes received instruction on the Gold Rush content in the teacher's usual method. Reference material, both authorized and supplementary, were available to experimental and control teachers. The five experimental classes were instructed on the content knowledge of the Gold Rush and in semantic and syntactic paraphrasing following the instructional unit. Both groups adhered to 220 minutes of instructional time per week during the four week time period allotted to covering the content knowledge of the Gold Rush. All students were then tested with the same three tests in knowledge, paraphrasing and comprehension. In addition, all students were administered the Este's Reading Attitude Scale. Finally, the researcher, using an interview probe, interviewed five students randomly selected from each of the experimental classrooms. A week after the

post-tests, all teachers met for debriefing with the researcher. The contents of the instructional unit were shared with the control teachers; the results of the tests were revealed individually to the teachers. Then the experimental teachers provided their perceptions on the strengths and weakness of the instructional unit.

## CHAPTER IV

### ANALYSIS AND FINDINGS

#### TEST FINDINGS

The evaluation component of this study sought to determine whether instruction in paraphrasing improved significantly students' skills in:

- i. paraphrasing,
- ii. comprehension and memory of the content knowledge of the Gold Rush,
- iii. general reading comprehension.

Tables I through IV provide the mean and standard deviation of the number of correct answers for each individual class and for the experimental and control groups for each of the pre- and post-tests of paraphrasing, knowledge and comprehension. There is a trend for each class to have a higher mean score on the post-tests.

A preliminary analysis of variance, using time testing as a factor, indicates that there is a significant main effect for both knowledge and comprehension ( $F=75.97$ ,  $df 1,16$ ,  $p \leq .01$ ;  $F=7.89$ ,  $df 1,16$ ,  $p \leq .01$ ) but not for paraphrasing. There are no

TABLE I  
 Comparison of Mean and Standard  
 Deviation for Individual Classes  
 in Sentence Paraphrasing Tests

	Pre test (K = 20)		Post test (K = 20)	
	Mean	St.Dev.	Mean	St.Dev.
Experimental Classes				
1.	6.64	1.15	7.08	1.26
2.	9.71	4.22	10.19	3.13
3.	10.19	5.06	9.17	3.78
4.	10.08	4.10	10.89	3.00
5.	8.21	1.82	10.56	2.79
Control Classes				
1.	6.15	2.60	6.97	3.48
2.	11.61	4.66	9.42	3.93
3.	4.54	3.54	5.12	3.48
4.	7.16	2.91	9.33	3.99
5.	7.07	1.75	8.92	2.08

TABLE II

Comparison of Mean and Standard Deviation  
 For Individual Classes in Content Knowledge  
 on the Gold Rush Test

	Pre test (K = 70)		Post test (K = 70)	
Experimental Classes	Mean	St. Dev.	Mean	St.Dev.
1	16.88	5.25	54.77	7.80
2	22.04	6.40	44.74	5.71
3	17.56	6.39	52.16	9.91
4	17.80	9.15	43.46	8.77
5	25.04	6.86	46.84	4.23
Control Classes				
1	22.19	4.86	33.57	7.13
2	23.95	8.17	59.88	11.50
3	17.38	6.78	38.50	10.42
4	19.11	4.88	34.70	7.42
5	23.94	6.94	46.35	8.98

TABLE III

Comparison of Mean and Standard Deviation  
for Individual Classes in General Reading  
Comprehension Test

		Pre test (K = 17)		Post test (K = 17)	
Experimental Classes		Mean	St.Dev.	Mean	St.Dev.
	1	9.76	2.23	11.21	1.66
	2	11.30	2.54	12.54	2.17
	3	10.21	3.30	12.36	2.90
	4	8.10	4.80	10.63	3.26
	5	11.02	3.62	13.02	2.34
Control Classes					
	1	11.33	3.81	11.00	3.63
	2	12.57	3.35	13.44	3.05
	3	9.96	3.95	11.98	3.25
	4	10.60	2.78	10.75	3.24
	5	10.35	3.81	12.00	3.11



TABLE IV

Comparison of Mean and Standard Deviation  
Between Experimental and Control Groups in  
Tests of Paraphrasing, Knowledge, and  
Comprehension

		Pre test			Post test		
Experimental Control		N	Mean	St. Dev.	N	Mean	St.Dev
	Sentence Test	Exp.	128	9.00	3.84	129	9.59
Cont.		128	7.20	3.88	124	7.87	3.80
Knowledge Test	Exp.	126	19.86	7.50	130	48.31	8.64
	Cont.	127	21.10	6.78	125	42.42	13.38
Comprehension Test	Exp.	128	10.10	3.61	130	11.95	2.64
	Cont.	122	10.90	3.63	124	11.82	3.35

significant treatment groups by time of testing interactions. Hence, it appears that the instruction in paraphrasing did not result in much benefit regarding the students' ability to do this task.

Subsequently, the analysis of covariance (ANCOVA), using the pre-test as the covariate, indicates that there is no significant post-test difference on the adjusted means between the two groups in paraphrasing ( $F=0.41$ ,  $P=0.55$ ), knowledge ( $F=0.35$ ,  $P=0.55$ ), or reading comprehension ( $F=0.62$ ,  $P=0.45$ ). Therefore the use of the instructional unit, The Gold Rush in British Columbia, has not appeared to significantly improve students skills in paraphrasing, comprehension and memory of the content knowledge of the Gold Rush, and general reading comprehension beyond the improvement yielded by routine instruction.

There is no significant difference between the two groups in regard to positive attitude toward reading ( $t=0.06$ ,  $df=8$ ,  $p=.95$ ).

### Interview Findings

The responses of twenty-five randomly selected students from the experimental group are categorized and summarized for each of four interview questions and for each ability level--above average, average, below average. Ability levels

were established by the student's teacher.

For the first question, "When you had finished the Gold Rush Unit what had you learned?", every respondent could recall from two to six specific chunks of knowledge about the Gold Rush in British Columbia. Students with above average and average abilities not only could recall facts but also could make generalizations such as: only some miners were successful in finding gold and many dangers were part of a gold mining town. Students with a below average ability presented two or three specific facts. Students used appropriate vocabulary and gold rush terminology in their answers. One student of above average ability and one student of below average ability replied that he/she had learned to paraphrase.

The second part of the interview probe asked students to "Name one or two things that you especially liked about the Gold Rush unit". Paraphrasing was mentioned by seven students (two above average, three average, two below average). One student from the last group replied, "I like paraphrasing because I was good in it and the activity sheets helped make me better". An average student replied that it was "fun listening to what others thought a word meant and putting your own ideas into it too".

Other things that student of above average abilities said they liked were:

- i. working with a partner (2)
- ii. learning about various aspects of the gold rush (9)
- iii.  
actually doing activities, such as panning for gold (3)
- iv. watching slides (1)
- v. completing the activity sheets "that told interesting information" (3)
- vi. talking things over as a class (2)
- vii.  
drawing because you "can show what you feel" (1).

Students of average ability liked four things similar to the  
aforementioned students:

- i. learning about specific topics (5)
- ii. working with a partner (1)
- iii.  
the activity sheets because "I learned a lot from them"  
(1)
- iv. drawing (5)

But they also noted that they liked:

- v. doing tests "because I knew I had learned a lot" (1)
- vi. cross word puzzles (1).

Students of lower ability had similar responses to the other two groups:

- i. learning about specific topics (4)
- ii. actual participation--panning, spraying rocks, mapwork (1)
- iii. cross word puzzle (1)
- iv. working with partners (1).

However the other responses of these students indicated that they also liked:

- v. watching filmstrips (1)
- vi. looking at pictures (1)
- vii. reading the stories on the activity sheets and then answering the questions "because they were interesting." (1)

Question three of the Interview Probe, "When you finished the Gold Rush Unit, what things could you do better?", attempted to gather information on the skills that the students perceived they were better in. In their responses to this question, ten students mentioned paraphrasing. Four students of below average ability replied that they paraphrased better with one student explaining that he/she was better at changing the words. Four average students indicated that paraphrasing helped them "think

of words better", and they knew they could paraphrase better because "the test was easier at the end." Another student replied that "paraphrasing showed me how to switch things around and helped me to learn new words". Two of the above average students said that they could paraphrase "a lot better--both ways."

In addition, students of below average ability made comments in response to question three, such as:

i. "I know a little bit more of it" - referring to the gold rush (3);

ii. "If somebody asks me to write down equipment they used, I could do it now" (2);

iii.

"I could do the tests better" (1);

iv. "I learned a lot about the Gold Rush" (2).

Students of average ability replied:

i. "When teacher asked questions I could answer them" (2);

ii. "I could tell what words meant when I read and when I did activities" (2);

iii.

"I could tell people about the gold rush and I felt good about it" (3);

iv. "I learned how to study" (1);

v. "I felt confused after the pre-test because I didn't know any of the questions. Now I know lots of things

about the Gold Rush" (1).

In addition to increased paraphrasing skills, above average students said that:

i. "I know more about the Gold Rush." Specific topics such as gold mining towns, Barkerville, mining for gold, the past and present value of gold were named (8);

ii. "I could do the knowledge test better" (1);

iii.

"I use my imagination better when I draw because I had a feeling for the way they lived".

The final question, "What was it in the Gold Rush unit that you liked least?", encouraged students to be critical of the Social Studies unit. Students of above average ability commented that they liked least of all:

i. the tests (1);

ii. paraphrasing because "it was boring" and "we had to do it for a long time and in each Social Studies period. Paraphrasing wasn't hard. I knew how to do it in Grade One. It was kinda like an English lesson in a way" (2);

iii.

specific topics: such as the violence, Judge Begbie (2);

iv. nothing (3);

v. doing all the worksheets individually and without discussion (2);

vi. one student said, "I would have preferred to talk with a

partner on those sheets to get more information instead of teacher reading all those pages out loud to us" (1).

Students of average ability responded that they did not like the unit:

- i. when too many new topics were introduced quickly or when too much work was assigned (1);
- ii. when it was given for homework (2);
- iii.

when the activity sheets proved to be too difficult or as one student said, "A couple of those paraphrasing sheets were really hard--they were mind boggling" (2). Examples given were: finding a sentence that could be paraphrased and then having your partner paraphrase that sentence or thinking of a question to paraphrase a sentence;

- iv. when they had to read all the sheets which had been included in Section Four as reference (4);
- v. nothing (2).

Rated lowest in preference by students of below average ability were:

- i. the difficulty of some of the activity sheets (2);
- ii. the tests (1);
- iii.  
the writing down all the vocabulary words (1);
- iv. the reading of a "whole bunch of pages" (1);



v. nothing (2) .

In summary, the interview of the twenty-five students indicated that they were generally knowledgeable about chunks of information about the Gold Rush. Students also perceived that they knew more about the Gold Rush after instruction than before. Nine of them responded that they could paraphrase better and seven said that they liked learning to paraphrase. Working with partners, participatory activities, drawing illustrations, the activity sheets were also rated highly by students. Least preferred in the unit by students were silent reading of a large number of pages, specific activity sheets, the quick instructional pace of the teacher.

## CHAPTER V

### CONCLUSIONS, DISCUSSION AND IMPLICATIONS

#### SUMMARY

The primary reason for this study was to develop and field-test a curriculum that taught students to recognize and construct semantic and syntactic paraphrases as well as to comprehend the content knowledge of the Gold Rush. Evaluation determined whether instruction in paraphrasing improved significantly the students' skills in paraphrasing, comprehension and recall of the content knowledge, and general reading comprehension.

Major findings of the study are:

- i. with one exception, each class of the experimental group had higher mean scores on the post-tests in paraphrasing, content knowledge and general reading comprehension than on the pre-tests. The same trend, however, existed for the control group, but not so strongly. Indeed, there was a significant improvement from pre-test to post-test for both groups on

comprehension and knowledge. Nevertheless, on the adjusted mean scores of the post-tests there were not significant differences between the experimental and control groups;

ii. the data did not support the assertion that instruction in paraphrasing significantly increases students' comprehension and recall of content knowledge;

iii.

students' general reading comprehension did not significantly improve after instruction in paraphrasing.

### CONCLUSIONS

From the statistical analysis the conclusion must be drawn that the curriculum unit, The Gold Rush in British Columbia, was unsuccessful in teaching students to be significantly better in paraphrasing and comprehending content knowledge of the Gold Rush than students who were taught using a curriculum that did not emphasize paraphrasing skills.

In the research design, each class became the basic unit for statistical analysis. Five classes composed the experimental group and another five classes were the control group. It must be recognized that the statistical tests had relatively low power due to the very small number of classes in the study. Future field-testing should double or triple the number of

classes in the experimental and control groups.

The importance of a clear conceptual framework for a curriculum design was recognized in the literature review (Eisner, 1979; Eisner and Vallance, 1974; Zais, 1976; Dukacz and Babin, 1980). The Gold Rush Unit was founded on the assumption of the priority of teaching process and the belief in the transferrability of a specific process to other content subjects (Eisner, 1979; Eisner and Vallance, 1974; Posner, 1978).

Because the results of this study do not appear to substantiate these assumptions, a variation in the curriculum design should be considered. The curriculum unit could be designed to teach the specific skill of paraphrasing first and then have subsequent curriculum units developed with activities in which the specific paraphrasing skill is used with the content knowledge of a subject. In this curriculum design, the skill of paraphrasing would have been learned before transferring the use of the skill into a content area (Eisner, 1979; Eisner and Vallance, 1974).

In developing the curriculum unit for this study, the skill of paraphrasing and the content knowledge of the Gold Rush were divided into six major sections and instructional strategies outlined were concrete and teacher specific (Ben-Peretz and Kremer, 1979). The curricular unit is considered to be completely prepared for use. For specific learning outcomes, there are these elements:

- i. background information on content for the teacher;
- ii. specific pages in reference materials;
- iii. teaching illustrations and pictures;
- iv. introductory activities;
- v. detailed teaching activities with directions, strategies, activity sheets, answer keys;
- vi. assessment instruction.

Although Ben-Peretz and Kremer conclude that explicitness in instruction materials facilitate teachers' use (1979), the specificity of the unit's design did not significantly improve students learning of either paraphrasing skills or knowledge of the Gold Rush as measured by the three tests in the evaluation component.

Field-testing of the curriculum unit involved teachers and students in using the curriculum in real classroom situations. In fact, the field-testing component of this study is identical to instructional research because both can provide information on:

- i. the outcomes of instruction;
- ii. the process of instruction;
- iii.

the conditions present during the instructional process. To date, little research on reading instruction and learning has actually taken place in classrooms (Tuinman, 1977). The major

piece of research on reading instruction during Reading and Social Studies classes, as outlined in the review of the literature, has recently been completed by Durkin (1978-79). Through direct observation and description of classroom comprehension instruction by teachers, Durkin ascertains that teachers spend minimal time in the instruction of comprehension during Reading and Social Studies in grades three to six. She reports that comprehension instruction was observed less than one percent of the time.

The evaluation component of this study's field-test of the Gold Rush unit collected information only on the outcomes of paraphrasing instruction in order to gather and analyze data to seek an answer as to whether direct instruction in paraphrasing significantly improves students' skills to paraphrase, to comprehend, and recall knowledge. What became obvious during the field-testing of this curriculum was the researcher has no control over the field-test conditions: internal and external events in the classroom, teacher's style of instruction, variations in materials used, and types of students. Although the way of analyzing the field-test or instructional research is often based on the methodology of science, the way of viewing the teacher's instruction, or use of curriculum, comes from different bodies of research: organizational management, agriculture and social sciences (Common, personal conversation, 1981).

## DISCUSSION OF RESULTS

The genesis of the curriculum used in this study sprang from the repeated comment of teachers: "How can I teach my students to put what they have read in their own words?". The skill of paraphrasing was obviously recognized as important by the teachers. In effect, the unit developed from the teachers' appraisal of learners' needs (Skilbeck, 1975) and from the researcher's belief in teaching students to comprehend and to think (Eisner, 1979) rather than teaching subject content.

Although the teachers' comments had sparked the development of the curriculum design that emphasized the process of paraphrasing, the researcher realized that paraphrasing was a means toward the processing of knowledge. The central assertion was that teaching paraphrasing could assist the students to comprehend and to remember the knowledge of the Gold Rush. The unit, designed with an orientation on process, appears in the test results, however, not to be successful in teaching students to paraphrase, to comprehend or to remember content of the Gold Rush significantly better than other students.

The question, "Why didn't this curriculum design significantly improve students' skills in paraphrasing, comprehension, and recall of knowledge?" began the process of analysis of the field-test conditions, the research design, the

curriculum unit and the tests.

The curriculum design of the Gold Rush Unit is oriented to process and is founded on the beliefs that:

- i. the teaching of comprehension skills in conjunction with instruction on knowledge is essential in content subjects, such as Social Studies and Science;
- ii. the teaching of comprehension skills will assist in the understanding and memory of content knowledge;
- iii.

curriculum tasks that promote thinking will outlive the knowledge learned (Eisner, 1979).

Teachers who use the Gold Rush unit must share the belief that the foundation of a curriculum design should be process and value the teaching of skills (Werner, 1979; Egan, 1978; MacLaughlin, 1973; Doyle and Ponder, 1977). Teachers who do not have values congruent with those that are the basis of the curriculum will interpret and use the curriculum according to their own values (Werner, 1979).

The field-test, using randomly selected experimental and control teachers, did not allow teachers, who value curriculum that emphasizes process, the choice of selecting the Gold Rush unit. If the experimental group of teachers had all valued curriculum based on the teaching of skills, would the outcomes of instruction as measured in the tests have been significantly different?



The research that provided the theoretical framework of paraphrasing presents findings that illustrates the complexity of paraphrasing: paraphrasing requires comprehension, intelligence, general knowledge, creativity (Pearson and Johnson, 1978; Clark and Clark, 1968; Thorndyke, 1977; Tuinman, 1977; Royer and Cunningham, In Press; Royer, Sefkow and Kropf, 1977; Royer, Hambleton and Cadorette, 1978; Geer, Gleitman and Gleitman, 1972). With paraphrasing as the foundation for the Social Studies curriculum unit, evaluation was completed on the outcomes of instruction through the use of pre- and post-test scores. Focusing evaluation on students' written pre- and post-test scores may have presented only one view of student learning of this complex skill. The summary of the student interviews illuminates student understanding and recall of content knowledge of the Gold Rush and their awareness of the skill of paraphrasing. Because interview samples did provide alternate clues on the extent of student learning, perhaps a more extensive use should have been made of student and teacher interviews in conjunction with observation by the researcher of students' performance in the classroom.

One of the limitations recognized before the study began was teacher variability in instructional style. From the interviews of twenty-five experimental students and their five teachers there are strong indications that the teachers varied the explicit instructional strategies that were outlined in the

unit. The very structured curriculum design was adapted by teachers from simple translations; such as changing research done by students in partners to a teacher presentation to the class.

Not only were there adaptations to the instructional unit but also teachers reported omitting chunks from the unit's sections. One of the reasons that teachers omitted parts of the unit was the pressure of time. Teachers devoted 220 minutes each week of the month allowed for the study. They indicated that was insufficient time to cover all sections thoroughly although the teacher who piloted the unit concluded that four weeks was sufficient instructional time if the students were actively engaged in learning. Was the lack of significant difference in the test results influenced by these instructional omissions and also by the quicker instructional pace that teachers adopt near the end of the month of field testing because they knew that they had to be finished teaching the Gold Rush unit by a specific date?

In addition, some of the experimental teachers mentioned specific events, such as band concerts, Open House, Canada Fitness Testing, that occurred during the post-testing times. These activities could have distracted the students during the crucial testing period. How much variability in teachers' styles and in classrooms' environments during the month of field-testing affected the students' test results in the study

is an important unanswered question.

Field-testers, as well as instructional researchers, should recognize, however, the limitations inherent in a time period of one month for the use of the unit. The variabilities in teachers' styles and in classrooms' environments can have significant impact on results of the data. Field testing a curriculum unit that taught only the skill of paraphrasing during five to ten days might have produced significant gains in experimental students' paraphrasing tests.

Careful analysis of the curriculum unit and tests after teachers and students had provided their final commentaries suggests, furthermore, that modifications in the curriculum design and tests might have produced more significant differences in paraphrasing and comprehension skills and content knowledge between the experimental and control classes. If the instructional order of semantic and syntactic paraphrasing had been altered in the unit, combined syntactic and semantic paraphrasing skills could have been emphasized in the last two sections of the unit. Examination of students' responses on the paraphrasing pre-test and post-tests indicates the majority of students used syntactical paraphrasing when they were instructed to write the sentences in their own words. Because the curriculum unit taught syntactic paraphrasing in the last half of the instructional time, it is possible that, in the post-test, the experimental students used syntactic paraphrasing

more frequently than a combination of syntactic and semantic paraphrasing because they were using the skill most recently taught. If the activities in the last sections of curriculum design had focused on semantic and syntactic paraphrasing skills, would the test results have been significantly altered?

Closer examination of the paraphrasing test's instructions indicated that certain modifications were necessary. The paraphrasing test's instruction included a note, "You can change the order of words if this does not change the meaning of the sentence". Should this have been omitted to remove the implied emphasis on syntactical paraphrasing? Any future research employing this curriculum unit should analyze whether the omission of that sentence in the instructions had any influence on the type of student paraphrasing.

### IMPLICATIONS

Because the experimental teachers reported adapting the explicit curriculum design during the field testing, it is recommended that information be gathered from observational studies to identify what influences teachers' decision-making during the use of curriculum (Durkin, 1978; Dalin, 1975; Common, 1979). It quickly became obvious that asking teachers, in an interview, what they do must be substantiated by observer data (Rosenshine, 1978).

Considering the positive reactions of the experimental students and teachers, this instructional unit, after suggested modifications are made, could be used by teachers who value the teaching of skills in content subjects. Teachers who prefer to use this process curriculum design could have the majority of their students in the Gold Rush unit because the curriculum has teaching/learning activities that are sufficiently varied and are building blocks for skills. Teachers could provide an alternate curriculum unit for students of above average ability who may already be competent in paraphrasing.

Although the pace could be slowed down with six or seven weeks allowed for the completion of the unit, the varied activities and the success related to those activities appear to garner student interest.

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APPENDIX I

CURRICULUM UNIT:

THE GOLD RUSH IN BRITISH COLUMBIA

## SECTION ONE

### DISCOVERY OF GOLD IN BRITISH COLUMBIA

#### LEARNING OUTCOMES

Knowledge: Student will recognize the meanings of specific vocabulary related to the gold rush

Skills: Student will identify semantic paraphrases of specific vocabulary used in sentences related to the gold rush.

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#### RELATED MATERIALS/RESOURCES

1. Worksheets 1, 2
2. Gold nugget or object
3. Chart paper
4. O.H. Projector and 6 plastic sheets.

#### TEACHER INFORMATION

Gold was discovered in the Fraser River in 1858 by the Thompson River Indians. Word spread rapidly and by 1859 23,000 people had arrived in B.C. to search for gold. Nuggets weighing as much as 6 ounces were found. The year ended with \$530,353.00 in placer gold returns. However, the take was probably greater because some miners never disclosed their takings.

#### INTRODUCTION

1. Teacher present a gold nugget or gold object.
2. Teacher asks probe questions:
  - (a) Why would gold draw thousands of people to British Columbia?

4. Teacher presents an oral summary (a model paraphrase) of information on:
- (a) number of people flooding into B.C. compared to the number already settled here.
  - (b) amount of gold taken out of the Fraser River
  - (c) size of gold nuggets
  - (d) towns associated with the Fraser River gold rush: (Victoria, New Westminster, Fort Langley, Harrison Mills, Yale) by referring to map of B.C.

### TEACHING ACTIVITIES

1. Oral Recognition of Paraphrases of Individual Words in Six Pairs of Sentences
- (a) An overhead transparency  
Teacher has written the six pairs of sentences  
See Activity Sheet 1
  - (b) Teacher covers the last five pairs while the first pair is shown on the screen.
  - (c) Teacher asks:  
"What word in sentence one has a similar meaning to a word (or word group) in sentence two?"
  - (d) Repeat for the rest of the pairs of sentences.
2. Oral Recording of Words that Mean the Same As a Word Underlined in a Sentence
- (a) Teacher writes each of the 7 sentences on a separate piece of chart paper which is hung across the front of the classroom. See Activity Sheet 2.
  - (b) Class works as a whole group. Positive comments from class mates should be encouraged as individuals give their oral responses.
  - (c) Teacher requests:  
"Let's see if we can discover words that mean the same as the word underlined in each sentence. You may use a dictionary".

- (d) Teacher or, individually, each student records his/her word below the underlined word on the individual chart paper.
- (e) Teacher writes paraphrased words on the chalkboard and draws students' attention to the fact that their words are paraphrases ( or words that have similar meanings) to the underlined words in the sentence.

3. Culmination: Illustration of the meaning of Sentence  
Using One of the Its Semantically Paraphrased Words

- (a) Chart paper with sentences and paraphrased words from Activity Two are placed across the front of the classroom.
- (b) Teacher directs students to:  
"Illustrate each of these sentences using one of the paraphrased words, that you have selected. On the bottom of your illustrations write your sentence. Underline the paraphrased words."
- (c) In small groups students share their illustrations with each other. Students compare how their illustrations show the meaning of the paraphrased word.
- (d) Illustrations for each sentence's paraphrased words are attached to the chart paper. These will form a display for two or three days.
- 

Time Required:

Comments on Activities:

ACTIVITY SHEET 1

Instructions to Teacher

Type or print these 6 pairs of sentences on an overhead transparency.

1.           (a) The gold was deposited in the gravel along the Fraser River.  
              (b) The gold was left lying in the gravel along the Fraser River.
2.           (a) Gradually each gravel deposit was staked by miners.  
              (b) Gradually each gravel deposit was marked with pegs by miners.
3.           (a) The men on Hill's Bar panned up to \$50. a day in gold.  
              (b) The miners on Hill's Bar separated gravel from gold worth about \$50. a day.
4.           (a) The miners hoped to find the mother lode.  
              (b) The miners hoped to find the origin of the river's gold.
5.           (a) An assortment of miners from San Francisco were bound for Fort Victoria.  
              (b) A collection of miners from San Francisco were bound for Fort Victoria.
6.           (a) The small specks of gold left in the gold pan were called prospect or colour.  
              (b) The small pieces of gold left in the gold pan were called prospect or colour.

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Each sentence was an excerpt from The Gold Rush, p. 21, 22 or Gold Rush in the Cariboo, p. 6

ACTIVITY SHEET 2

Instructions to Teacher

Write each of these sentences on a separate piece of chart paper.

1. Indians had discovered small quantities of gold near Fort Kamloops in 1856.
2. News of the gold discovery reached California by 1858.
3. The first miners returned from the Fraser River with leather pokes full of gold dust.
4. Gold fever broke out in earnest in February, 1858, with the arrival of the Hudson's Bay Company's ship, Otter.
5. The ship, Otter, carried a shipment of gold from Fort Victoria to the mint at San Francisco.
6. The gold rush was on in 1858.
7. The miner left Yale on the Express Freight and Passenger Line Stage Coach on Mondays and Fridays at 3 A.M.

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Reference: Gold Rush in Cariboo p. 5.



## SECTION TWO

### METHODS OF MINING FOR GOLD

#### LEARNING OUTCOMES

- Knowledge:
- (1) students will recognize the meaning of vocabulary related to methods of mining.
  - (2) students will explain 3 basic processes of mining for gold: gold pan, rocker box and sluice box.
- Skills:
- (1) students will identify semantic paraphrases of specific vocabulary words, used in sentences related to methods of mining for gold.
  - (2) students will identify key groups of words in a sentence.
  - (3) students will arrange key groups of words from sentences under provided main headings of an outline.
  - (4) Students will write semantic paraphrases for key groups of words.

#### REFERENCES

1. Neering, Rosemary, GOLD RUSH, p 14 - 15
2. Barlee, N.L. THE GUIDE TO GOLD PANNING IN BRITISH COLUMBIA, p. 7 - 22, 182-191

#### RELATED MATERIALS/RESOURCE

1. Activity Sheets 2 - 6
2. Illustrations for mining vocabulary for opaque projector presentation.
3. Gold pan, home made, rocker box or sluice box (Last two optional).
4. Lead shot, gravel, water.

#### TEACHER INFORMATION

Several methods were used in early gold mining: gold pan, rocker box, and sluice box. Shafts and tunnels were dug by hand. In addition wooden cornish wheels and flumes were built. With very basic equipment miners were able to garner much placer gold.

## INTRODUCTION

1. Using gold pan, gravel, lead shot and water teacher demonstrates gold panning.

Refer to N.L. Barlee, The Guide to Gold Panning in British Columbia, p. 8 - 9

2. If possible teacher takes students on a walking field trip to a nearby stream with gravel and sand bed. Students use gold pans or dull metal pie plates. Let the student attempt to pan for gold. A rocker box or sluice box can also be used.

## TEACHING ACTIVITIES

1. Identification of Semantic Paraphrases of Specific Gold Mining Vocabulary.

This is a review of the skill activity in Section 1.

- (a) Using opaque projection to show pictorial examples for each, teacher teaches the following vocabulary:
  - (i) rocker box - dolly or cradle. Wooden container with screen on top
  - (ii) sluice box - long wooden box with strips of wood called riffles along the bottom
  - (iii) bedrock - continuous layer of rock upon which placer gold settles because of water action.
  - (iv) drifting - horizontal tunnelling into a bank in order to reach bedrock
  - (v) shaft - deep hole dug into the ground
  - (vi) cornish wheel - water wheel used to raise water for mining
  - (vii) flumes - wooden ditches to carry water
  - (viii) riffles - strips of wood across bottom of sluice boxes or rocker to trap gold

- (ix) dust - extremely fine flakes
- (x) grains - small particles
- (xi) nuggets - piece or lump
- (xii) Karat - describes the purity of the gold.  
24 Karats is pure gold.
- (xiii) placer - deposit of gravel which contains  
gold
- (xiv) fool's gold - material that looks like  
real gold.

(b) Meanings of Words are for Teachers' reference  
Pictorial Examples are included.

(c) Each student is then given Activity Sheet 3  
(Excerpts from The Gold Rush p. 14 - 17).

Teacher instructs:

"Read the Master Sentence which has the number  
beside it. Read the sentences below it and look  
for the one sentence that has words that mean the  
same as a word or words in the Master Sentence.

Circle that sentence.

Illustrate each sentence in the box."

(d) Teacher leads class or has students in small groups to  
discuss why they selected each paraphrased sentence.

(e) Teacher collects to assess student's ability.

2. Identification of Key Groups of Words in a Sentence

- (a) Teacher writes the following sentences on the chalkboard and asks students to identify key groups of words that match the clue words
- (b) After the key group of words is underlined student then semantically paraphrased the key group. Teacher records paraphrase on chalkboard.
  - (i) All the simple methods depended on the fact that gold is heavier than an equal amount of almost any other material.

- basic mining methods based on \_\_\_\_\_  
(key group of words)

(Clue words)

- (ii) When gold and sand or gravel are mixed with water the gold will sink to the bottom of the container because gold is so heavy.

- gold goes to bottom of a pan because \_\_\_\_\_

- (c) Do further examples as a group if most students have not grasped the skill.
- (d) Individually students complete Activity Sheet 4 to identify key groups of words in sentences (Excerpts from Gold Rush, p. 14).
- (e) Teacher evaluates students' assignments and provides small group instruction to any students experiencing difficulty.
- (f) Students recopy the Key groups of words using Outline form of main heading and details.

3. A. Arrangement of Key Groups of Words from Sentences in Paragraphs under Specific Headings
- B. Writing of Semantic Paraphrases for those Key Groups of Words

- (a) Students are given Activity Sheet 5 to complete in pairs.
- (b) Teacher gives the following suggestions:
- (i) Each of you is to read the required pages.
  - (ii) Take turns being recorder.
  - (iii) For each clue word write down the key group of words.
  - (iv) On the line below, that has a P write a paraphrase for the key group of words.
  - (v) Discuss with your partner whether your paraphrase has the same meaning as the key group.
- (c) Student will copy their key group of words for each topic in outline form.

4. Evaluation of Learning Outcomes in Section One and Two

- (a) Each student is given Work Sheet 6 which has a list of 14 key vocabulary words in sentences.

Section 2

Matching Meanings

Activity Sheet 3

ANSWER KEY

1. b
2. a
3. a
4. c
5. c
6. b

- (i.) Each of you is going to find out how well you know the meaning of key words that we are going to use in our study of the Gold Rush. Also you will discover how well you can identify paraphrases for the key words.
  - (ii.) Notice that key groups of words have been underlined.
  - (iii) Write a paraphrase for each sentence.
- 

Time Required:

Comments on Activities:

ACTIVITY SHEET 3

Name: \_\_\_\_\_

Date: \_\_\_\_\_

INSTRUCTIONS:

Read the Master Sentence.

Read the sentences below it and look for one sentence that has words that mean the same as a word or words in the Master Sentence.

Circle that sentence.

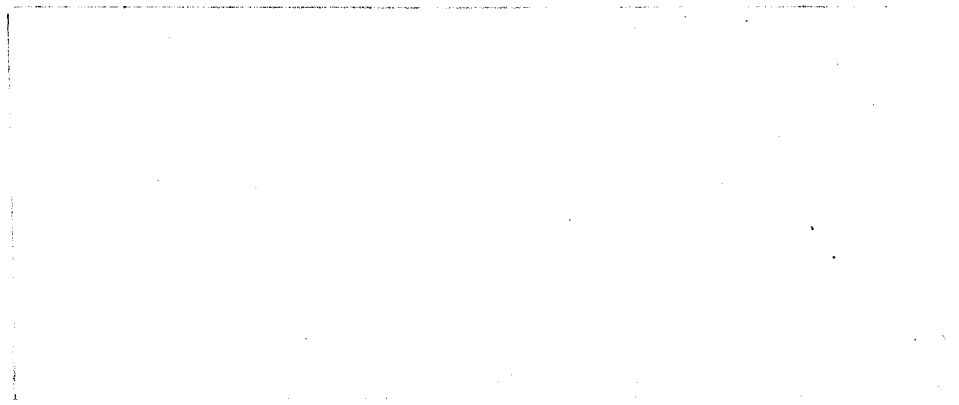
Illustrate each Master/Paraphrased Sentence in the box.

1. After the miner loosened the gravel with his pick and put a shovelful of gravel in the gold pan, he spotted a nugget of gold.

(a) After the miner picked the gravel and shovelled it into the gold pan, he noted a lump of gold.

(b) After the miner moved the gravel with his pick and placed a shovel of gravel in the gold pan, he noticed a piece of gold.

(c) After the miner moved about gravel with his pick and dumped gravel into a pan, he grabbed a piece of gold.



2. The rocker box was rocked from side to side so that the fine particles of gold were washed through and caught on the riffles on the bottom of the box.



(a) The dolly was rocked back and forth so that grains of gold were carried through and caught on the strips of wood along the bottom of the box.

(b) The rocker box was moved in a rocking motion so that the gold caught on the wood strips.

(c) The dolly's cradle was rocked continuously to trap gold on the bottom.

3. The water was brought to the sluice box by a long flume.

(a) Water was carried to the sluice box by a long wooden ditch.

(b) H<sub>2</sub>O moved to the sluice box through a ditch.

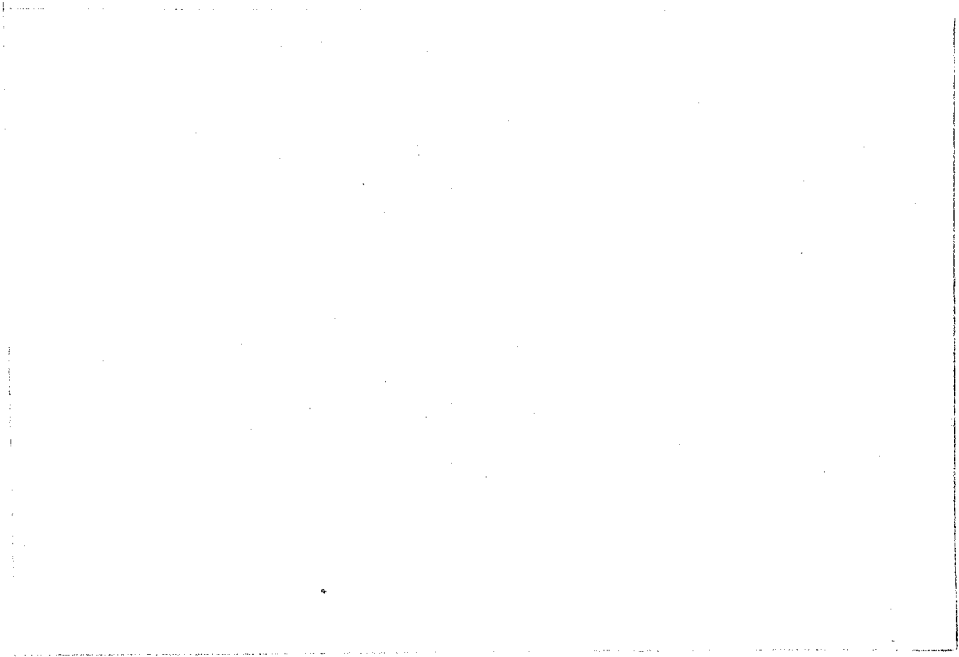
(c) Water travelled to the wooden cart through a wooden ditch.

4. The cornish wheel was turned by water brought in on a wooden trough.

(a) The cornish wheel was operated by water pouring through a ditch.

(b) The water wheel was encircled by water which had travelled through a ditch.

(c) The water wheel was moved by water carried in on a flume.

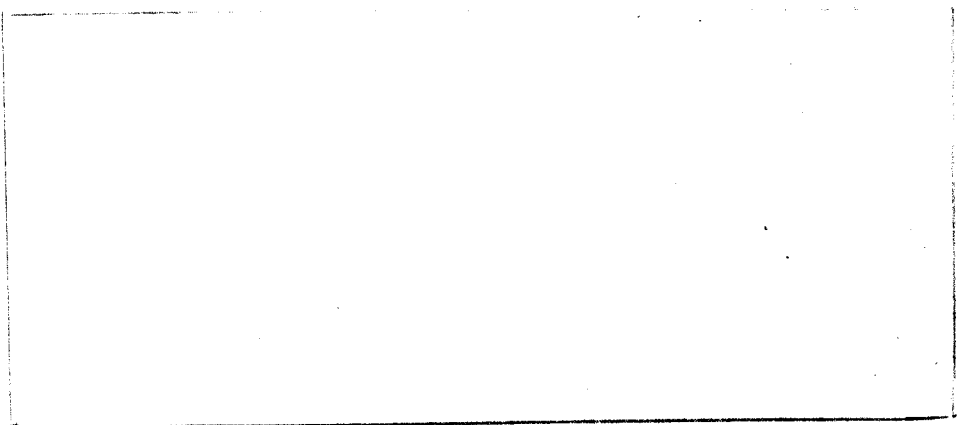


5. Sometimes the miners drifted into the side of the hill or bank a shaft deep into the ground so that they could chip away at the bedrock.

(a) Occasionally, the miners dug into the hill and then dug deep into the ground to get to the bedrock.

(b) Once in a while miners dug in and down the earth so that they could mine the bedrock.

(c) At times the miners tunnelled horizontally into a bank or dug a deep hole into the ground so they could pick away at the continuous layer of rock.

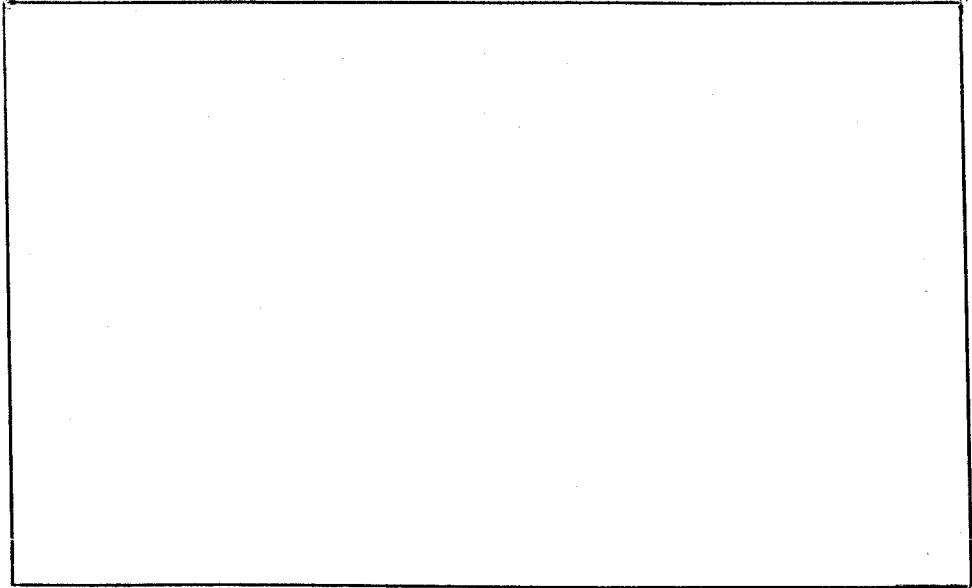


6. The gold dust he found was fool's gold, but the nugget was 20 karats.

(a) The dust he located was not gold, but the large piece was pure gold.

(b) The golden fine flakes he located were a mineral that looked like real gold, but the lump was nearly pure gold.

(c) The gold he mined was pretend gold, but the nugget was real.



ACTIVITY SHEET 4

Date: \_\_\_\_\_

Name: \_\_\_\_\_

Instructions:

1. Read the master sentence.
2. Look at the clue words underneath.
3. Then underline the key group of words in the master sentence.
4. Paraphrase the key group of words and write it beside the clue words.

METHODS OF MININGPANNING FOR GOLD

1. The gold pan was used mainly to sample the gravel of a stream, to see if there was gold there.

pan used to \_\_\_\_\_

2. The miner loosened the gravel with his pick and put a shovelful of gravel into the gold pan.

miner \_\_\_\_\_ into pan.

3. He worked his hands through the gravel, to break apart any lumps.

to crumble lumps he \_\_\_\_\_

4. Then he filled the pan with water and tilted it away from himself slightly so water and gravel would flow over the pan's edge as he turned the pan slowly.

to cause the water and lighter gravel to leave the gold pan the miner \_\_\_\_\_

5. He repeated this process until only a fine black sand was left.

kept doing the procedure so that \_\_\_\_\_

6. The black sand was magnetic, so he could remove the sand with a magnet, leaving the gold.

took away the sand because \_\_\_\_\_

7. He carefully picked up the flakes of gold.

selected \_\_\_\_\_

SECTION 2

ACTIVITY SHEET 5

PARAPHRASING  
KEY GROUPS OF WORDS  
IN  
METHODS OF MINING

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Instructions:

1.
  - (a) Each of you read page 15, Gold Rush.
  - (b) Look at the pictures carefully.
2. Take turns being recorder.
3. For each clue word write down the key group of words.
4. On the line below starting with "P" write a paraphrase for the key group of words.
5. Discuss with each other whether your paraphrase has the same meaning as the key group.
6. Hand in for teacher's assessment.

METHODS OF MINING

B. ROCKER BOX

- located by \_\_\_\_\_  
P \_\_\_\_\_

- gravel placed \_\_\_\_\_  
P \_\_\_\_\_

- water \_\_\_\_\_ by bucket  
P \_\_\_\_\_

- box was rocked so \_\_\_\_\_  
P \_\_\_\_\_

- gold caught on \_\_\_\_\_

P \_\_\_\_\_

- rest of sand and gravel \_\_\_\_\_

P \_\_\_\_\_

C. SLUICE BOX

- could handle \_\_\_\_\_

P \_\_\_\_\_

- could not be \_\_\_\_\_

P \_\_\_\_\_

- miners shovelled \_\_\_\_\_

P \_\_\_\_\_

- water brought to sluice box by \_\_\_\_\_

P \_\_\_\_\_

- water directed on \_\_\_\_\_

P \_\_\_\_\_

- gravel was washed \_\_\_\_\_

P \_\_\_\_\_

- \_\_\_\_\_ on riffles

P \_\_\_\_\_

CHECK-UP FOR  
SECTIONS 1 and 2  
ACTIVITY SHEET 6

HOW SKILFUL ARE YOU WITH  
WORD MEANINGS?

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Instructions:

Write a paraphrase for the underlined words in each sentence.

1. The gold was deposited in the gravel along the Fraser River.

2. Small specks of gold were left sometimes in the gold pan

3. The gold rush was on in 1858.

4. The gold particles were heavier than sand and so they were caught in the riffles.

5. That day their sluice box was full of fool's gold

6. The miners drifted deep into the bedrock.



7. The cornish wheel was used to carry water from the shaft in a flume

---

8. His mining bag was filled with gold dust.

---

9. Their rocker box was located by the Fraser River.

---

## SECTION THREE

### "MINERS ALONG THE FRASER RIVER"

#### LEARNING OUTCOMES

- Knowledge:
- (1) Students will outline the basic equipment that a miner would need to take with him in 1859.
  - (2) Students will define the problems of the miners as they moved along the Fraser River.
- Skills:
- (1) Students will identify and construct sentences that are syntactically paraphrased by recognizing that changing the word order of a sentence does not alter the meaning of the sentence.
  - (2) Students will construct main headings that are paraphrases of questions.

#### REFERENCES

1. Gold Rush, p. 21 - 27
2. Gold Rush to the Cariboo, p 6 - 11

#### RELATED MATERIALS/RESOURCES

1. Film, Gold, from Delta Resource Centre.
2. The Guide to Gold Panning in British Columbia p. 100 - 112  
167 - 170.
3. Activity Sheets 7 - 8
4. Hall, Ralph. Goldseekers. (Victoria: Sono Nis Press, 1978).
5. Paterson, T.W. Encyclopedia of Ghost Towns & Mining Camps of British Columbia (Langley: Stage Coach Publishing, 1979).

#### TEACHER INFORMATION

Just above Fort Langley gold began to appear. In 1858 gold-bearing sandbars were found from Fort Langley up 200 miles to Pavilion. Ten thousand miners populated the Fraser River between these two points.

## INTRODUCTION

### To Review Sections 1 and 2

Before showing the film "Gold" teacher explains that students are going to be asked to retell in their own words, how to mine for gold.

The children will tell in their own words (semantically paraph.) the film's presentation on how to mine for gold. Teacher will record their paraphrases on chart paper.

## TEACHING ACTIVITIES

### 1. Identification of Sentences that Are Syntactically Paraphrased

- (a) Teacher introduces this activity with a brainstorming session using the question:

"What equipment would a miner have to take with him to mine on the Fraser River?"

Record students' responses on chart paper.

- (b) Have students categorize responses under, at least, two headings in their note books.

- (c) Teacher then orally presents the following pairs of sentences to students preceded by the questions:

"Do these two sentences say the same thing?"

- (i) By mid-summer there were 10,000 men looking for gold between Fort Hope and Lytton.

- (i) Between Fort Hope and Lytton there were 10,000 men looking for gold by mid-summer.

- (ii) By the end of the year 1858 some \$500,000 in gold had been taken out of the Fraser.

- (ii) Some \$500,000 in gold had been taken out of the Fraser by the end of the year 1858.

- (d) Students verbalize the conclusion that each sentence has the same words and meaning but a key group of words is in a different order.

- (e) On the chalkboard teacher writes the following the following pair of sentences:

- (iii) In dry diggings, a claim was a staked area twenty-five feet by thirty feet
- (iii) A claim was a staked area twenty-five feet by thirty feet in dry diggings.
- (f) Teacher has a student underline the key group of words that is in a different location in the second sentence.
- (g) Students reach the conclusions that changing a key group of words to another logical position in a sentence does not change the meaning of the sentence. Teacher explains that one sentence is a paraphrase of the other.
- (h) Teacher presents Activity Sheet 7 (Excerpts from Guide to Gold Mining, p. 167-170) in which students will identify syntactic paraphrases on the topic, Equipment Needed for Mining, comment
- (i) Teacher explains:

"Read and follow the instructions at the top of the sheet very carefully.

Show the teacher your page when you are finished. Then put this page in your note book. Draw on another page any other equipment which a miner might need that is not illustrated on the activity sheet.

2. Construction of Sentences that Are Syntactical Paraphrases of Sentences in the Text, Gold Rush in the Cariboo, p. 6 -7

- (a) Teacher reviews the last Activity by writing the following pair of sentences
  - (i) For two years, the prospectors searched
  - (ii) The prospectors searched for two years.and has students identify which key group of words has moved. Teacher reviews the term, paraphrase.
- (b) Then teacher writes this sentence
  - (ii) They stopped to try the gravel of each tiny stream they came to, hoping that this might be the one that might make them rich.on the chalkboard and asks the students to construct another sentence that has the same words and meaning but has the key words in a different order.

(c) Students are to work with a partner in the following activity.

(d) Teacher instructs:

"When miners, with their equipment, reached the Fraser River, there were many things to do.

Read p. 6 - 7 "Fraser River Gold" in Gold Rush in the Cariboo to find out what were some things the miners had to do. Then re-read the two pages and select 5 sentences that <sup>each</sup> have key groups of words that could be moved to another spot in the sentence without changing the sentence's meaning. Write those 5 sentences on Activity Sheet 8. Then trade sheets with your partner and write a paraphrase for each of your partner's 5 sentences. Tell your partner if you have difficulty paraphrasing his/her choice of sentences. Perhaps the choice of sentence is not quite right and another sentence will need to be selected. At the end, analyze your partner's paraphrases of your sentences".

(e) Teacher reviews with students that they are looking for sentences with key groups of words that can move into a new place in the sentence without changing the sentence's meaning.

(f) Afterwards, teacher evaluates student's choice sentences and the paraphrases of their partners' sentences.

(g) As a follow-up students can draw a cartoon for two of the sentences and their paraphrases.

### 3. Construction of Main Headings That Are Paraphrases of Questions.

(a) Teacher introduces this lesson by reviewing the idea that a question gives us the main idea for which we need to find information from a text book. Also a main heading in our outlines direct us to find specific information. Then the question is posed: "Can we paraphrase questions into main headings to help locate specific information?"

(b) In a large group the following examples are worked on:

A. What effect did the spring flooding of the Fraser River have on the miners?

- (c) (i) Key words are underlined.
- (ii) Then these key words, with some semantic paraphrasing, are written as a main heading.
  - e.g. A. Result of Spring Flooding of Fraser River on Miners.
  - B. Diet of the Miners.
- (d) Conclusion is verbalized that questions can be paraphrased into main headings.
- (e) The following questions are written on the chalkboard:

MINERS ALONG THE FRASER RIVER

How would weather affect the miners on the Fraser?

Under what conditions would miners have travelled through the forests and water?

How did miners bring in their equipment and supplies?

What did the miners do during the evenings?

What did the miners do if they couldn't find gold at their claim?

- (f) Teacher instructs:
  - (i) Write on your note paper the first two headings we paraphrased from questions. Leave 5 lines' space between headings.
  - (ii) Now write main heading that paraphrase the 5 questions on the chalkboard. Leave 5 lines' space between headings.
  - (iii) Hand in when finished.
- (g) After all students have completed their paraphrases they are requested to listen carefully to the anecdotes that the teacher is to tell. Under each main heading they are to list 2 - 3 details.
- (h) Teacher anecdotally describes with use of pictures the problems faced in the day to day life of miners on the Fraser River:

- (i) Weather Conditions
  - (ii) Flooding in the Spring
  - (iii) Monotonous Diet
  - (iv) Travelling Rough Trails and Waters
  - (v) Carrying Their Supplies
  - (vi) Lonely Evenings
  - (vii) Poor Yields of Gold
- (i) Students, in pairs, share with each other the details each person has collected.
  - (j) Outlines with illustrations handed in for teacher's assessment.
  - (k) Outline headings are recorded on individual slips of paper;
  - (l) In small groups students select a slip and dramatize a pantomime or a skit which shows the key problems faced every day by miners in 1858.
  - (m) After that presentation to class, individual students describe in paraphrase the event enacted.
  - (n) Then, in partners, one dramatizes a problem Other partner mimes (Kinesthetic paraphrase).

## SECTION FOUR

### "TWO ROUTES TO GOLD IN THE CARIBOO"

#### LEARNING OUTCOMES

##### Knowledge:

- (1) Students will define modes of transportation to the Cariboo: foot, horse, mule, camel, stagecoach, steamboat.
- (2) Students will state the significance of roadhouses;
- (3) Students will outline the problems and the significance of the Royal Engineers' construction of the Wagon Road.

##### Skills:

- (1) Students will complete a cross word puzzle which reviews semantic paraphrasing skills
- (2) Students will construct questions that are paraphrases of main headings;
- (3) Students will employ paraphrase questions beside a specific section of the text to select details for main headings in an outline.

#### REFERENCES:

1. Gold Rush , p. 33 49 - 52
2. Gold Rush in the Cariboo p. 10, 13, 18 - 21
3. B.C.T.F. Lesson Aid #2065 - "Gold in the Cariboo"  
Transportation Section.

#### RELATED MATERIALS/RESOURCES

1. Downs, Art., Wagon Road North. (Surrey; Foremost Publishing, 1960), p. 21 - 51.
2. Photocopies of p. 26 - 31; 32 - 40; 42 - 47 from Wagon Road North for each student
3. Crossword Puzzle - Social Studies Games, Surrey School District.
4. Activity Sheets 10 - 11
5. Class map of British Columbia.



## TEACHER INFORMATION

Miners used a variety of modes of transport to the Cariboo: foot, mule, camel, Red River Cart, wheelbarrow, stagecoach, stern-wheeler, rafts. The roadhouse, which was used by the miner to rest and eat, provided a wide variation in accommodation. The Royal Engineers helped to construct the road to the Cariboo.

## INTRODUCTION

Filmstrip: Gold Rush: Pioneer Mining in B.C. in Prescribed  
Filmstrip Kit: Growth of a Nation - Canada. PART 2.

## TEACHING ACTIVITIES

1. Completion of Crossword Puzzle to Review Semantic Paraphrases
  - (a) Students will complete Activity Sheet 9 - Gold Rush Crossword Puzzle and check their puzzle with an answer key.
  
2. Construction of Questions That Are Paraphrases of Main Headings
  - (a) Teacher poses the problem:

"Can you construct a question that is a paraphrase of a main heading?"
  - (b) Teacher writes on the chalkboard:
    - (i) Reasons for Roadhousesand presents pictures of roadhouse using opaque projector.

The Teacher asks students for a question that paraphrases this main heading.
  - (c) Teacher asks students to think of reasons for roadhouses. These are recorded under the question. Teacher shares any additional reasons.
  - (d) Teacher presents further examples for student to construct questions:
    - (ii) Location of Roadhouses
    - (iii) Type of Service At a Roadhouse.

- (e) Information on these questions, photocopies from Wagon Road North, p. 26 - 31 is presented so that students can collect specific details for each question.
- (f) Students use this information to write a statement on: Why a miner would stay at a roadhouse?
- (g) To reinforce this skill the following game should be played:

#### THINK QUESTIONS

Divide class into 2 groups. Each group is numbered off into 2 teams. One team is the Headers and they present main headings on Gold Rush topics. The other team, the Questioners, are to construct an oral question which is a paraphrase of the given main heading. The Headers evaluate the question and assign the scoring point. At half time the Headers Team become the Questioners and vice versa. The winning team of each group could have a play-off.

- (h) To construct written questions from Main Headings on travel to the Cariboo student will complete Activity Sheet 10
- (i) Teacher gives each student photocopies of pages 32, 40, 42 - 47 of Wagon Road North so that students can read to find 3 specific details for each of their paraphrased questions.
- (j) Students record questions from Activity Sheet 10 in their notebooks and their 3 details in point form.

3. Use of Paraphrased Questions Beside Excerpts from  
the Two Prescribed Text Books To Select Specific  
Details for A Given Outline

- (a) Teacher explains that in this activity students will use paraphrased questions to help them find details on the Royal Engineers' building of the road to the Cariboo. Students will be asked to evaluate whether paraphrased questions help them locate details.
- (b) Teacher shows pictures of the Royal Engineers from p. 42 - 43, Wagon Road North , and explains that the Royal Engineers helped to build the road which opened up the Cariboo (Refer to map of B.C.).
- (c) Teacher explains the instructions on Activity Sheet 11.
- (d) Evaluation by teacher is made on details recorded in the outline. Students who paraphrased some of the details are given bonus stickers.

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Time Required:

Notes from Activities:

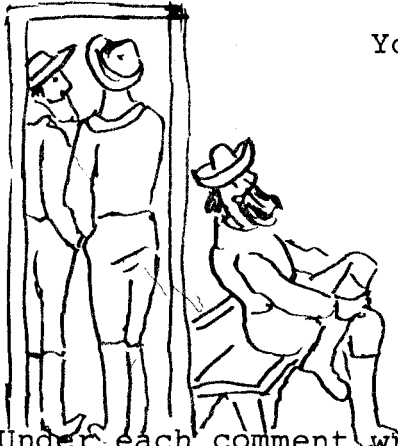
SECTION FOUR

HOW CAN I TRAVEL TO  
CARIBOO GOLD FIELDS?

ACTIVITY SHEET 10

Name: Miner: \_\_\_\_\_

Date: \_\_\_\_\_



You are a miner at Yale who is planning to travel to the Cariboo to mine for gold. You overhear the following bits of comments in conversation between two miners who are returning from the Cariboo.

Under each comment write a paraphrased question which would gain you more specific information.

Miner Dan: Mean Nature of Camels

Q. \_\_\_\_\_

Miner Joe: Travelling by Red River Carts over rails

Q. \_\_\_\_\_

Miner Dan: Difficulty with Mule Trains

Q. \_\_\_\_\_

Miner Joe: Horses for Stagecoaches

Q. \_\_\_\_\_

Miner Dan: Good points of Sternwheelers

Q. \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

INSTRUCTIONS

1. Look at Information Sheets.
2. Read the questions on the right hand side of the sheet.
3. Read the paragraph beside the question to find the details to answer the questions.
4. Write the details (paraphrased as much as you can) on the outline below.

ROYAL ENGINEERS CONSTRUCT THE WAGON ROAD  
TO THE CARIBOO

---

I Location of Wagon Road to Cariboo

- (a)
- (b)
- (c)
- (d)

II Problems in Constructing the Road

- (a)
- (b)
- (c)
- (d)

III Results of the Construction of the Road to the Cariboo

- (a)
- (b)

## SECTION FIVE

### "BARKERVILLE: A MINING TOWN IN THE CARIBOO"

#### LEARNING OUTCOMES

##### Knowledge:

- (1) Student will write 5 characteristics of a mining town in the 1800's , Barkerville,

##### Skills:

- (1) Students will construct semantic and/or syntactic paraphrases of a collection of Barkerville Headlines.
- (2) Students will construct syntactic and pictorial paraphrases of key words in a newspaper advertisement.
- (3) Students, given pictures and related questions, will construct semantically paraphrased details for a given outline.

##### REFERENCES:

1. Gold Rush , p. 38 - 43
2. Gold Rush in the Cariboo, p. 10 - 15

##### RELATED MATERIALS/RESOURCES:

1. The Guide to Gold Panning in British Columbia
2. Activity Sheets 12 and 13
3. Wagon Road North p. 52, 72 (photocopy)
4. Lindsay, F.W. Cariboo Yarns. (Vernon: Vernon News, 1963.
5. Ramsey, Bruce, Barkerville, (Vancouver: Mitchell Press, 1960).
6. 18" x 24" cartridge drawing paper.

## INTRODUCTION

- (a) Teacher introduces this lesson with the question:  
"Who has been to Barkerville?".
- (b) Teacher has some students share some of their memories of Barkerville.
- (c) Teacher asks if they would like to learn more about the Town, Barkerville, which was a very important town in the Cariboo Gold Rush.
- (d) A centre which has pictures, artifacts and books on Barkerville is set up.

## TEACHING ACTIVITIES

1. Construction of Semantic/Syntactic Paraphrases of Headlines and Key Words in Advertisements from the Gold Rush, p. 39 - 42
  - (a) Teacher shows modern day headlines on gold.
  - (b) Students construct semantic or syntactic paraphrases orally for it. Teacher records them on the chalkboard.
  - (c) Teacher presents a challenge:  
"On pages 39 - 42 in Gold Rush there are headlines and advertisements from a June 1864 Barkerville newspaper, The Cariboo Sentinel. You are to work in partners. Select one headline and advertisement. Paraphrase the headline and as much of the advertisement that you can. Draw a picture to express the meaning of your advertisement. Print your paraphrased headline and advertisement on your drawing."
  - (d) Students will share their pictures and paraphrases with the classes.
  - (e) All pictures are then displayed in the classroom near the Barkerville Centre.

2. Construction of Details for a Given Outline by  
Paraphrasing Pictures

- (a) Teacher gives each pair of students a copy of the following pictures of Barkerville:

The Guide to Gold Panning in British Columbia  
p. 84

Wagon Road North p. 52, 72

- (b) Teacher asks students to look carefully at these pictures plus the pictures in Gold Rush p. 38, 40, 41, 43 after they have read the questions on Activity Sheet 12,

- (c) Students work in pairs to look at the pictures and to discuss qualifying details.

Each student records his/her details on their own Activity Sheet 13, an outline sheet with main headings given.

- (d) Each student will write a letter to his/her partner to describe 5 characteristics of the mining town Barkerville.

- (e) Partner could write a letter of response to state agreement or disagreement.

---

Time Required:

Notes from Activities:



ACTIVITY SHEET 12

NAME: \_\_\_\_\_ DATE: \_\_\_\_\_

INSTRUCTIONS:

1. Look at the pictures
2. Read a question.
3. Look at the picture again.
4. Talk it over with your partner
5. Write your paraphrase on Activity Sheet 13 under the correct heading

1. What types of stores can you see?
2. Of what material were the buildings made?
3. Why do you think it was used?
4. Why do you think a high wooden sidewalk was built?
5. How were the houses located in the town?
6. What was dangerous about the buildings?
7. Where was the gold mining done?
8. Why were the mountains bare of trees around Barkerville?
9. Where did the miners live?
10. Why was the flume built?
11. What were roads made of?
12. Where were businesses located?

Name: \_\_\_\_\_

Date: \_\_\_\_\_

INSTRUCTIONS:

1. Write your paraphrase under the correct main heading.

I Types of Business

II Materials for Building

III Living Quarters for Miners

IV Roadway and Sidewalks

V Surrounding Landscape

VI Location of Gold Mining

VII Dangers in the Town.

## SECTION SIX

### "RESULTS OF THE GOLD RUSH IN BRITISH COLUMBIA"

#### LEARNING OUTCOMES:

##### Knowledge:

- (1) Students will list results of the Gold Rush as:
  - (a) development of law and order
  - (b) development of gold mining as an industry
  - (c) growth in population of many different nationalities
  - (d) growth of towns and businesses
  - (e) emergent system of roads
  - (f) development of a system of government.

##### Skills:

- (1) Student will construct syntactic paraphrases of sentences with connective words by changing the order of the group of words beginning with the connective word.

#### REFERENCES:

1. Gold Rush, p. 55
2. Gold Rush in the Cariboo, p. 9, 22

#### RELATED MATERIALS/RESOURCES

1. Wagon Road North, p. 64

#### TEACHER INFORMATION

By 1864 most of the surface gold had been mined from the Cariboo. Many men left with as little money as they arrived. Others had spent their money in the gambling halls and saloons. Only some men had struck it rich in the gold fields.

The men who profited the most were: merchants, farmers, ranchers, owners of mines.

## INTRODUCTION

- (a) Teacher poses the following questions for students to think about and to orally respond to:
- (i) Why did a town develop around a gold mining site?
  - (ii) What other businesses were in a mining town other than gold mining?
  - (iii) When the surface gold ran out, what do you think many miners would do?
  - (iv) What would other miners do?
  - (v) Why was it necessary to have law and order during the gold rush?
  - (vi) What type of person would be needed to establish law and order?
- (b) Teacher shares some anecdotes about Judge Matthew Begbie. Use information from Wagon Road North, p. 64

## TEACHING ACTIVITIES

1. Construction of Syntactic Paraphrases of Sentences with Connective Words
- (a) Teacher writes this sentence on chalkboard with bracketed word omitted:
- There was less violence in British Columbia (because) law and order was established by Judge Begbie.
- (b) Teachers asks:
- (i) What connecting word do we need?
  - (ii) If answers other than "because" are given by students, teacher asks:  
"Which one sounds better?"
  - (iii) If we change the order of a key group of words will it change the meaning of the sentence? If we move because and the group of words that follow it to the beginning of the sentence does it change the meaning of the sentence?

- (c) Teacher follows the same procedure with the following sentences:
- (i) (Although) surface gold ran out, hydraulic mining operations continued in the 1870's.
  - (ii) Gold mining developed as an industry (because) miners realized that there was much more gold in the bedrock below the surface.
  - (iii) Law and order had to be established by a man (such as) Judge Begbie.
  - (iv) (When) gold was discovered in a location, great numbers of people flooded into the location.
  - (v) Towns and business developed (after) miners had established themselves in a location.
  - (vi) Many different nationalities of people came to B.C. (because) they were greedy for gold.
  - (vii) (If) goods and people were to be transported more cheaply and easier, a road system had to be built.
  - (viii) Roads were built to the Cariboo (although) there were many difficulties in constructing them.
  - (ix) On July 1, 1858 a bill was introduced to the British parliament (in order to) create the new colony of British Columbia.
  - (x) James Douglas was offered the post of Governor of British Columbia (if) he stopped working for the Hudson's Bay Company.
- (d) With the above sentences remaining on the chalkboard teacher asks students to list in their notebooks 6 results for this topic:

RESULTS OF THE GOLD RUSH FOR  
BRITISH COLUMBIA

- (e) After the teacher has assessed the information in their lists, students share their lists with the class.
- 

Time Required:

Notes on Activities:

APPENDIX II

TESTS AND INSTRUCTIONS

APPENDIX II  
EVALUATION INSTRUMENTS  
SENTENCE TEST

Write these sentences in your own words.

NOTE: You can change the order of words if this does not change the meaning of the sentence.

1. The teen-age boy carried his food in his knapsack.

---

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2. The Vancouver Canucks beat the Toronto Maple Leafs in a game.

---

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3. The slender lady shut the window.

---

---

4. To buy parts for his bicycle, Terry walked three miles to the store.

---

---

5. In order to fill the glass bottle the man removed the cap with a small tool.

---

---



6. Our dog, Sam, napped on the carpet in the kitchen.

---

---

7. roads were built into the Cariboo country although there were many difficulties in constructing them.

---

---

/ 20

Total Score

COMPREHENSION

Read each paragraph carefully.

Below each paragraph read each question and write down your answer on the lines.

A. ESCAPE FROM A PRISON CAMP

As Peter neared the end of the tunnel, he shone the flashlight ahead. He called softly to John. He was afraid to call loudly, for he was now under the wire and close to the sentry's beat. He passed the bend, where they had changed course, and came to the end of the tunnel.

Where he thought he would locate John there was nothing but a solid wall of sand.

John must have been digging steadily on and in banking up the sand behind him he had completely blocked the tunnel. Peter bored a small hole through the wall of sand, which was rather thick.

1. Why was Peter too frightened to shout?

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2. What did Peter find instead of his partner?

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B.

MINING FOR GOLD

The men usually worked by twos. Standing with their feet in the icy river water, with big hats to keep off the sun, they shoveled great mounds of dirt from the spot where they believed gold to be buried. Then one man held a sieve, made of loosely bound willow branches, over a common cooking pan. The other man shoveled earth into the sieve. When the pan was full, the men carried it to the river and lowered it into the water. Then with sticks they stirred the earth until most of it flowed over the top of the pan and was carried away. What was left they placed in the sun to dry. And when it had dried and the sand had blown away, the gold lay shining in the bottom of the pan, sometimes in pieces the size of a nut, but more often in the form of dust or sand.

1. Why did the miners work with a partner?

---

---

2. What did the men use to mix the dirt and water in the container?

---

3. What did the miners do with the material remaining in the container?

---

4. How was the strainer constructed?

---

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C.

From the beginning of No Place on Earth

The cell was like a tomb, its walls dead white. They curved upward without an opening to a bubble of glass in the center of the ceiling. Beyond the bubble there was no light -- only the dark blue of the night sky. The walls were bare except for a portrait of a bearded man and two slots which read March 10, 2240, and 11:25 P.M. The cell door was only a penciled outline on the smooth walls.

The cell's furnishings were a large stone slab table on a pedestal and an upright metal chair. A man sat in the chair, his arms bound behind his back.

1. What furniture did the small room contain?

---

---

2. Why was the small room like a grave?

---

---

---

D.

CROSSING THE RIVER

Several methods of crossing rivers were used by covered wagon travellers, the method depending upon the depth and character of the water to be crossed. Sometimes wagons were used as boats or ferries to carry the women and children and supplies. The wheels were taken off, and all seams and cracks in the wagon boxes were caulked, or filled, by stuffing them with a fibrous material: string, cloth, or paper. The floors were lined with buffalo robes or canvas, and the wagon-boats were guided through the water. Great sport for the children, this was. Again, in shallow water, oxen pulled the wagons, wheels and all, through the ford. The wagon boxes were raised out of reach of the water by blocks of wood, "chocks", inserted under the four corners. Still another method of crossing, when timber was plentiful, was on rafts or boats, which the men made from logs.

1. Name 3 different ways by which the other side of the streams could be reached?

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---

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2. Why were all the holes in the carts stopped up?

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GOLD RUSH IN BRITISH COLUMBIA

READ THE SENTENCE CAREFULLY.

RECORD YOUR ANSWERS IN TWO WAYS:

1. Put an X in the box beside the answer you choose.
2. Write your answer on the line.

1. Miners came to B.C. to search for gold because they
  - (a) wanted to claim more lands.
  - (b) wanted to buy material things.
  - (c) were greedy and wanted to become rich.
  - (d) needed excitement in their lives.
  - (e) Don't Know
2. Over half a million dollars worth of gold was mined from the Fraser River.
  - Yes       No       Don't Know
3. Put an X beside the names of the towns that a miner might have visited on his search for gold in the Fraser River.

<input type="checkbox"/> Vancouver	<input type="checkbox"/> Fort Langley
<input type="checkbox"/> Fort Victoria	<input type="checkbox"/> Harrison Hot Springs
<input type="checkbox"/> Langley	<input type="checkbox"/> Hope
<input type="checkbox"/> New Westminster	<input type="checkbox"/> Yale
	<input type="checkbox"/> Don't Know
4. A mother lode is
  - (a) the beginning of a river.
  - (b) the source of a rivers gold.
  - (c) the stopping off spot.
  - (d) the old mine.
  - (e) Don't Know

5. The prospect or colour are the small specks of gold that a miner might find in his pan.

True       False       Don't Know

6. Grains of gold are caught on \_\_\_\_\_  
\_\_\_\_\_ in the rocker box.

7. A flume is

- (a) a long wooden ditch.
- (b) a long sluice box.
- (c) a long ditch dug by hand.
- (d) a long metal pipe.
- (e) Don't Know

8. The gold pan is used mainly to sample the gravel of a stream to see if there is gold.

Yes       No       Don't Know

9. When miners drifted they \_\_\_\_\_  
\_\_\_\_\_.

10. The rocker box was located by \_\_\_\_\_  
\_\_\_\_\_.

11. The sluice box could handle \_\_\_\_\_  
but could not be \_\_\_\_\_.

12. Gold dust was caught on the riffles in the \_\_\_\_\_  
\_\_\_\_\_ and the \_\_\_\_\_.

13. The gold particles caught in the riffles because \_\_\_\_\_  
\_\_\_\_\_.

14. In 1859 a miner would need to take certain equipment along with him. Check the equipment from the list below that the miner would have to take:

- |                                      |                                   |
|--------------------------------------|-----------------------------------|
| <input type="checkbox"/> map         | <input type="checkbox"/> nails    |
| <input type="checkbox"/> food        | <input type="checkbox"/> pick     |
| <input type="checkbox"/> axe         | <input type="checkbox"/> magnet   |
| <input type="checkbox"/> traps       | <input type="checkbox"/> drills   |
| <input type="checkbox"/> shovel      | <input type="checkbox"/> tweezers |
| <input type="checkbox"/> screwdriver | <input type="checkbox"/> sextant  |

15. List 4 problems that the miners would have as they mined for gold along the Fraser River:

- (a) \_\_\_\_\_  
\_\_\_\_\_
- (b) \_\_\_\_\_  
\_\_\_\_\_
- (c) \_\_\_\_\_  
\_\_\_\_\_
- (d) \_\_\_\_\_  
\_\_\_\_\_

16. If you were a miner in 1859 write down 4 ways you might have transported yourself to the Cariboo:

- (a) \_\_\_\_\_
- (b) \_\_\_\_\_
- (c) \_\_\_\_\_
- (d) \_\_\_\_\_



17. From the list below place an X beside the 2 reasons why roadhouses were important.

- (a) horses could be watered and fed
- (b) the roadhouses provided frustrated miners with a way of earning a living
- (c) entertainment in the roadhouses provided an escape from work
- (d) miners could live there while they mined for gold
- (e) a bed and food could be purchased
- (f) Don't Know

18. Place an X beside the 3 groups of words that tells about the problems of the Royal Engineers as they helped construct the Wagon Road to the Cariboo.

- (a) their equipment kept breaking
- (b) mules kept dying
- (c) lack of workers
- (d) blasting the rock
- (e) lack of money
- (f) not enough wood and tar
- (g) building cribbing along the side of the mountain
- (h) steamboats did not bring in supplies fast enough
- (i) Don't Know

19. Write 5 features of a mining town in the Cariboo in the 1860's.

- (a) \_\_\_\_\_  
\_\_\_\_\_
- (b) \_\_\_\_\_  
\_\_\_\_\_
- (c) \_\_\_\_\_  
\_\_\_\_\_
- (d) \_\_\_\_\_  
\_\_\_\_\_
- (e) \_\_\_\_\_  
\_\_\_\_\_

20. Circle  Yes or  No if you think the following things resulted from the Gold Rush in British Columbia.

- |   |     |    |
|---|-----|----|
| (a) Most miners became wealthy.                             | Yes | No |
| (b) Businesses developed by the mining fields.              | Yes | No |
| (c) Roads were built.                                       | Yes | No |
| (d) New towns developed.                                    | Yes | No |
| (e) Many groups of people came to live in British Columbia. | Yes | No |
| (f) Strict laws were enforced.                              | Yes | No |
| (g) Each town had their own system of government.           | Yes | No |

TOTAL SCORE        / 70

# G O L D R U S H T E S T I N G

## I N S T R U C T I O N S T O T E A C H E R S

### P R E T E S T I N G

1. Schedule one test per morning or afternoon session. For example:

Monday A.M. - Comprehension Test  
Monday P.M. - Paraphrasing Test  
Tuesday A.M. - Gold Rush Knowledge Test

2. Run off one copy of each test for each of your students.
3. Set the regular testing environment:
  - a. quiet setting - no interruptions.
  - b. sufficient sharpened pencils and erasers.
  - c. desk in straight rows.
4.
  - a. On your class list give each of your students a code (letter or number or word).
  - b. On this class list, cross out your name, and school. Put an "X" if you are using my instructional unit. Put an "0" if you are using your own.
  - c. Have each student name each of his/her test papers with his/her code. (This is to maintain confidentiality.)
  - d. On a black class list, write each student's code; e.g.

NAME "X" or "0"      SCHOOL NIL      DATE: Feb. 16, 1981

\_\_\_\_\_  
Name

\_\_\_\_\_  
Arf

\_\_\_\_\_  
Bowser

- e. I will provide you with all marks using each student's code.
5. C O M P R E H E N S I O N T E S T
    - a. There is no time limit.
    - b. Students may write answers in the normal manner in which they have been trained; either full sentences or in point form.
    - c. Teacher should not explain any word meanings.
    - d. S.Boulanger will mark this test.
  6. S E N T E N C E T E S T
    - a. have the students read the instructions carefully.
    - b. If there is confusion, do the following example on the chalkboard:  
Example: The bunny raced into the forest.
    - c. There is no time limit.
    - d. S. Boulanger will mark this test.

## GOLD RUSH TESTING

### 7. Knowledge of Gold Rush Test

1. Assure your students very completely that they are not expected to know the answers to all of these questions. The students are to select the answer that they know and to mark "Don't Know" on the remaining answers.
2. There is no time limit.
3. Teachers are to watch very carefully for student frustration as most students are unaccustomed to pre-tests in knowledge.
4. Teachers are to mark this test with the provided Key.

### 8. MARKING

1. Clip each group fo tests together.
2. Send three tests plus two CODED class lists to Sandra Boulanger.
3. Pre-test results will be returned to you.

### 9. POST-TESTING

1. Repeat above instructions for tests on:
  - a. Comprehension
  - b. Paraphrasing
  - c. Knowledge of Gold Rush
2. On Tuesday P.M. administer the ESTE Reading Attitude Test (which should take about 10 minutes).
  - a. Teacher should go over how to mark the scale on the chalkboard.
3. Interview Questions -
  - a. I will interview five students selected randomly.
  - b. I will orally read the open-ended statement or question and then record the student's answers.
4. Clip each group of tests together.
5. Send five sets with the class list containing the pre-test marks to Sandra Boulanger.
6. The post=test and evidence of growth results shall be returned to each teacher.

THANK YOU FOR PARTICIPATING IN THIS STUDY.

Sandra Boulanger  
District In-Service  
Support Person

ESTE'S READING  
ATTITUDE SCALE

INSTRUCTIONS

*This is a scale to measure how you feel about reading. Below you will find some statements about reading. Read each statement and mark the oval corresponding to how you feel about it.*

*Please be as honest as possible in rating each statement. There is no correct answer.*

ATTITUDE TOWARD READING

	<u>Strongly Agree</u>	<u>Agree</u>	<u>Can't Decide</u>	<u>Disagree</u>	<u>Strongly Disagree</u>
1. Reading is for learning but not for enjoyment....	A	B	C	D	E
2. Spending allowance on books is a waste of good money.....	A	B	C	D	E
3. Reading is a good way to spend spare time.....	A	B	C	D	E
4. Books are a bore.....	A	B	C	D	E
5. Watching T.V. is better than reading.....	A	B	C	D	E
6. Reading is rewarding to me.....	A	B	C	D	E
7. Books aren't usually good enough to finish....	A	B	C	D	E
8. Reading becomes boring after about an hour.....	A	B	C	D	E
9. Most books are too long and dull.....	A	B	C	D	E
10. There are many books which I hope to read....	A	B	C	D	E
11. Books should only be read when they are assigned...	A	B	C	D	E
12. Reading is something I can do without.....	A	B	C	D	E
13. Some part of summer vacation should be set aside for reading.....	A	B	C	D	E
14. Books make good presents.	A	B	C	D	E
15. Reading is dull.....	A	B	C	D	E
	<u>Strongly Agree</u>	<u>Agree</u>	<u>Can't Decide</u>	<u>Disagree</u>	<u>Strongly Disagree</u>

APPENDIX III

INTERVIEW PROBE

APPENDIX III

INTERVIEW PROBE ON THE GOLD RUSH UNIT

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At the end of the unit the teacher or field tester will ask a random 5 students in each class to orally complete each of the sentence starters below. The teacher or field tester will record each student's responses on a separate sheet.

---

1. When you finished the Gold Rush Unit what had you learned?

---

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2. Please name one or two things that you especially liked about the Gold Rush Unit:

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3. When you finished the Gold Rush Unit what things could you do better?

---

---

---

4. What was it in the Gold Rush unit that you liked least?

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---

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APPENDIX IV

INSERVICE TRAINING FOR TEACHERS IN THE STUDY



## APPENDIX IV

### IN-SERVICE TRAINING FOR TEACHERS

#### Five Weeks Before the Field-testing Began

The curriculum developer met with the principal and teachers in each school involved in the field-test to:

- i) confirm whether the time for the field test was appropriate;
- ii) set date of inservice session and explain purpose of the inservice;
- iii) collect data on teacher training, teaching experience and inservice training in Social Studies.

#### Three Weeks Before the Field-testing Began

The curriculum unit, The Gold Rush in British Columbia, was sent to the experimental teachers a week before the scheduled inservice session in order that teachers could read the unit and prepare any questions and articulate any concerns.

#### Two Weeks Before the Field-testing Began

The forty-five minute inservice session for all teachers was held after school. The objectives outlined for the training sessions were that all teachers were:

- i) To become knowledgeable of the content of the Gold Rush curriculum unit;
- ii) To become knowledgeable of the procedure of the study and of the testing.

The workshop, as outlined below, combined an explanation of the knowledge content of the unit and the procedure of the study in addition to the practicing of the writing of objectives.

#### WARMUP:

#### WHOLE GROUP

Turn to your neighbour and tell about an effect of an instructional activity that you have used in the last few months.

#### FOCUS:

Review of:

- i) general purpose of the study;
- ii) overall procedure of the study.

LECTURETTE:

- i) Pre- and Post-Testing procedure.
- ii) Writing knowledge objectives for the Gold Rush

ACTIVITY:

WHOLE GROUP

- i) Write a knowledge objective for the Gold Rush

FEEDBACK:

Comparison of that objective to general knowledge objectives of the unit.

Each school's teachers received copies of the B.C. Teachers' Federation Lesson Aide #2065, Gold in the Cariboo, reference books, Wagon Road North and The Guide to Gold Panning in B.C.

The control teacher left while the experimental group continued the training session for another 45 minutes, with more coffee and goodies provided.

For these teachers samples of teaching activities and students' work from the pilot were displayed. Objectives for this section were that experimental teachers were:

- i) To become aware of the conceptual framework of the curriculum unit;
- ii) To become knowledgeable of the structure of the curriculum unit;
- iii) To become knowledgeable about teaching paraphrasing skills.

The workshop continued with:

LECTURETTE:

- i) Introduction to the conceptual framework of the unit.
- ii) Explanation of the structure of the curriculum unit.
- iii) Explanation about teaching strategies for instruction of paraphrasing skills.

ACTIVITY:

LARGE GROUP

Answering of questions and concerns.

Demonstration of pilot teacher's student activities.

Discussion of a list of suggestions for the unit that resulted from the pilot.

SMALL GROUP

Outline what you are going to need to do before starting on this unit.

SUMMARY/EVALUATION:

- Review how the conceptual framework led to the structure and the teaching strategies in the curriculum unit.
- Special Thanks & Oral Evaluation.

One Week After the Field-testing Concluded

All teachers were invited to attend a short session in which the control teachers discovered the purposes of the research study and examined the curriculum unit.

The session revolved around this outline:

OBJECTIVES:

- i) Teachers will list suggestions for adapting Social Studies unit.
- ii) Teachers will form a communication network.
- iii) All teachers will become aware of presuppositions that underlie the curriculum unit.

WARM-UP: Coffee and Goodies

FOCUS: Uncovering the secret of the Study: (Teaching of Content and Paraphrasing).

LECTURETTE:

- i) Presuppositions that are the foundations of the curriculum unit.
- ii) What the students said.
- iii) Adapting the curriculum unit.

ACTIVITY: WHOLE GROUP

- i) Record ideas on chart paper on adaptation done by teachers when they were using the Gold Rush unit.
- ii) Outline the strengths of the unit.
- iii) Suggest adaptations for the curriculum unit and the tests

FEEDBACK:

- i) Reaction from teachers - Where do we go from here in teaching skills in Social Studies?
- ii) Handout of student evaluation.
- iii) Thanks for participation.